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# ***JPRS Report***

# **Environmental Issues**

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# Environmental Issues

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12 November 1992

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### **International Portable Weapons Congress Held in Chile**

*PY1610200092 Santiago EL MERCURIO in Spanish  
3 Oct 92 p C7*

[Text] The idea of manufacturing ammunition with components that do not affect the world ecology was discussed during the 22d meeting of the International Permanent Committee for the Testing of Portable Weapons, CIP [not further identified], which took place in Santiago from 12 to 16 October.

This was stated by Manuel Carevic, director of the Army Control and Research Institute [Instituto de Investigacion y Control del Ejercito], when pointing out the conclusions of the meeting that was attended by observers from 16 countries, including the United States and the Russian Federation.

He said that during this event "they improved the specifications with the objective of complying with safety norms so that the people who use portable weapons may do so without any risk to themselves."

He said that weapons manufacturers now will have clear ideas of where they must guide their efforts to place new products in the market in compliance with international safety norms.

Colonel Manuel Carevic said initiatives have been taken to use products that will not damage the environment. This affects ammunition with lead so that it will not contaminate lakes and rivers, in harmony with the environment.

In turn, Brigadier General Fernando Hormazabal Diaz, commander of the Military Ordnance and Engineering Command, CIMI, said the professional attitude of each of the participants was evident from their statements at the meeting.

He said the foreign delegates were pleasantly surprised with the technical quality of the IDIC [expansion unknown], the professional quality of the institute and personnel, despite their youth, but especially with the meeting's good organization.

U.S. delegate Paul Eschrich said: "The young people specialized in the subject are a credit to Chile."

Russian delegate J. Karnaoshkin said, in turn, that the work atmosphere was excellent.

### **Experts Report 'Massive' Black Sea Pollution**

*AU1710133692 Paris AFP in English 0434 GMT  
17 Oct 92*

[Text] Trieste, Italy, Oct 17 (AFP)—An ecological catastrophe is looming in the Black Sea where catches of fish have shrunk by two thirds in recent years largely as a result of massive industrial pollution, a meeting of marine experts here concluded.

Of the total volume of water in the Black Sea, experts said oxygen was present only in about 10 percent near the surface where most of its marine life is concentrated.

But it is this surface water which is subject to constant pollution by industrial waste carried down by the Danube, the Dniepr and the Don, to name only the three biggest rivers.

According to Stanislas Konovalov, the director of the Southern Seas Institute in Sevastopol, the Danube alone dumps 1,000 tonnes of chromium, 60 tonnes of mercury and 50,000 tonnes of oil into the Black Sea each year. These figures are higher than the total annual pollution of all the rivers which flow into the North Sea which is of comparable size.

To these pollutants must be added the phosphates, nitrates and pesticides from agriculture of which the quantities found near the Sea of Azov are 100 times higher than in the Mediterranean, Konovalov said.

The experts noted that the effects of pollution were exacerbated by the make-up of the Black Sea. In some parts, oxygen runs out at about 100 meters (yards) from the surface. Beyond this level, the water is denser and more salty and heavily saturated with hydrogen sulphide making it almost impossible for marine life to survive.

In recent years a new threat has emerged with the uncontrolled proliferation of a jelly-fish, the "Mnemiopsis leidyi" which is believed to have been introduced accidentally about five years ago.

This jelly-fish which according to experts has no natural enemy in the Black Sea, preys on plankton, larvae and newly hatched fish.

As a result of the combined effects of pollution and this new predator, the annual fish catch which was 1.5 million tonnes in 1985, has declined to 500,000 tonnes.

Last April Black Sea states, Romania, Bulgaria, Ukraine, Russia, Georgia and Turkey signed the first international agreement to try to halt pollution in the Black Sea.

### **Asian Countries Resume Wetlands Symposium**

*OW1910075092 Tokyo KYODO in English 0540 GMT  
19 Oct 92*

[Text] Kushiro, Hokkaido, Oct. 19 (KYODO)—About 150 people from 36 Asian countries resumed a symposium on Monday to urge Asian countries to sign a convention on the protection of wetlands.

The two-day second round of the symposium, which followed a three-day session held in Otsu, Shiga Prefecture, is focusing on the best legal structure for the use of wetlands and their monitoring and management, the organizers said.

The symposium, which Japan's Environment Agency helped organize, is being held as a prelude to an international conference in Hokkaido next May of the member countries of the Ramsar Convention on protecting waterfowl and other wildlife in wetlands. Those attending include representatives of both governments and nongovernmental organizations.

Ivan Ruzicka of the Manila-based Asian Development Bank said there is a need to spell out the future benefits to be derived from wetlands.

Japan has four wetlands areas registered under the convention, including the Kushiro Marshes in Hokkaido near where next year's conference will take place.

The convention, which Japan signed in 1980, takes its name from the northern Iranian city where the first meeting of member countries was held in 1971.

Signatories have to register at least one wetland area with the convention secretariat and present a plan for its protection.

## GHANA

### **Problem of Pollution, Disasters in Developing Countries Viewed**

*AB1510185392 Accra Ghana Broadcasting Corporation  
Radio Network in English 1800 GMT 14 Oct 92*

[Commentary by Ebo Ayison]

[Text] Pollution of the air, land, and sea poses serious risk to present and future generations, but efforts aimed at controlling pollution, which eventually results in a disaster, especially in developing countries, are far from adequate and could be improved at a low cost. Those that are in place tend to be either poorly designed or not enforced. General economic policies often exacerbate the problem, failing to take into account possible effects on the environment.

As developing countries begin to redesign policies aimed at controlling disasters more effectively, they will need to find ways to minimize possible adverse effects on other objectives, such as growth and revenue-raising. They will also have to keep in mind important administrative, technological, and institutional constraints, drawing heavily on a wide range of physical tools to complement more traditional disaster control instruments.

Government intervention is generally needed to prevent or alleviate the effects of disasters because of a fundamental failure of the industrial sector to take into account the interests of those that are being hurt. Such disasters usually affect the well-being of many individuals. Government action should be aimed at making those causing it, especially polluters, behave as if they have the victims at heart. This can be accomplished through stringent regulatory measures. Possibilities include a tax on emissions, a limit on amount of pollution, and subsidies to cleaner alternatives. It is known that disaster in developing countries, particularly Africa, is great and its effects are out of proportion, and even deadlier than those in other regions of the world, and usually, upsets hard-won economic gains. This is mainly due to drought, wars, and civil strife, floods, and epidemics, and its effects on the population include sudden deaths, injuries, disabilities, communicable and chronic diseases, environmental degradation, and loss of home, thus creating refugees.

While it is generally agreed that it is virtually impossible to prevent calamities from occurring, experience has shown that they can be forestalled to reduce their impact on people, property, and environment, and prevent them from becoming disasters. This can be done by providing advanced protection and security to potential victims, and by ensuring that more effective response assistance—specifically tailored to the type and extent of the disaster—are put in place.

The United Nations, acknowledging the rapid growth and immensity of social and economic losses to developed and developing countries, as a result of natural disasters, proclaimed the 1990's as international decade

for natural disaster reduction, and maintained that global concerted effort was necessary to mitigate the adverse effects of disasters. An action framework was therefore adopted by the General Assembly. These include a call on all governments to adopt specific policy measures at the national level designed to achieve disaster mitigation, and to participate in a concerted international effort.

A call to scientific and technological institutions, financial institutions, foundations, and related national, and international non governmental organizations to participate fully in the activities of the decade, and the decision that the second Wednesday of October each year should be observed as international day for national disaster reduction.

With increasing worldwide population, man has come to live near many potential dangers. The demand for space to live and grow food results in clearing of previously forested areas, at times even contributing to the intensity of some natural disasters. We need to develop greater fellow feeling, or empathy for others, when disaster strikes. Within the disaster zone, loving concern needs to be shown for one's fellow sufferers rather than adopting attitude that each one has to fend for himself.

## SOUTH AFRICA

### **Government Employees Allegedly Involved in Poaching Wildlife**

*93WN0016A Johannesburg THE WEEKLY MAIL  
in English 4-10 Sep 92 p 17*

[Article by Iden Wetherell]

[Text] Conservationists are expressing mounting concern at the slaughter of Zimbabwe's wildlife. And they are raising questions about the involvement of government employees tasked with the protection of rhino and elephant herds.

At the meeting in Japan last March of signatories to the Convention on International Trade in Endangered Species (Cites), Zimbabwe claimed to have 2,000 black rhino but a recent dehorning exercise found fewer than 500.

The "disappearance" of 1,500 rhino only came to light at a meeting of the Cites technical committee held in Harare recently. Department of National Parks and Wildlife Management officials were asked to explain the discrepancy in the figures. Observers at the meeting expressed concern at the level of poaching and official complacency while a Greenpeace spokesman accused the department of hiding the truth.

Only two months ago, National Parks assistant director Willis Makombe claimed anti-poaching units had reduced poaching activity generally and that there had specifically been "less loss to rhino."

However, Jorgen Thomsen, director of Traffic International, the wildlife monitoring agency, said: "We are probably faced with the situation right now where at

least one animal is disappearing every week," Jorgen Thomsen, director of Traffic International, the wildlife monitoring agency, told ZIMBABWE WILDLIFE.

Matusadona, on the southern shore of Lake Kariba, contained 150 black rhino three years ago. Only 15 survive today. Dick Pitman, of the Zambezi Society, cites Matusadona as "a horrifying example of what lies ahead"—no rhino, and soon no elephant when the poachers turn their attention to tusks.

Weapons confiscated from poachers last December have been traced to senior officials in Zambia's main political parties. North Korean diplomats in Harare and Lusaka have also been implicated in the smuggling of rhino horn.

Criminal handlers in Lusaka, it would seem, are monitoring the dehorning exercise and sending in hit teams to kill rhino identified for dehorning before National Parks staff can reach them.

"It is time for National Parks to stop pretending that the rhino situation is under control, and to admit that the present crisis is largely due to corruption, gross negligence, and involvement by government employees," a local conservationist said in a letter to the press.

It is understood that government has been supplied with documentary evidence implicating state employees in the poaching of some 900 elephants in the Gona-re-Zhou park during the 1980s.

Allegations have been made by the London-based Environmental Investigation Agency of systematic poaching by the Zimbabwean army stationed in Mozambique.

Individuals associated with poaching in Gona-re-Zhou are now responsible for supervising culling operations in other national parks on the border with Zambia, areas with the highest concentration of rhino and elephant, conservationists allege.

Whereas in the past, culling was undertaken by specialised units, the loss of trained personnel has led to "station culls" in which unskilled local staff, it is suggested, proceed on foot or by vehicle and simply shoot at any elephants they encounter.

"Station culling does not meet any of the old criteria which made the old-style culls a respected and accepted management tool," said one conservationist formerly associated with National Parks. "There is no control over the by-products of the cull, no attempt made to ensure random selection, and no attempt made to ensure humane methods."

National Parks chief warden Glenn Tatham rejects these charges. "All ivory is registered within 15 days under the provisions of the Parks and Wildlife Act," he says. It is then stored at National Parks headquarters. "Cross checks are made and all stocks are audited." He does concede that "ad hoc" station culls of up to 100 elephant take place but only on the instructions of the director.

Zimbabwe and other southern African states that claim to be professionally managing their national parks and are therefore faced with the problem of a wildlife surplus applied at the Cites meeting in Japan to have restrictions lifted on the sale and disposal of elephant products. That move was resisted precisely because conservationists and Cites officials believe that the record of these countries was less than exemplary.

### Spokesman Outlines ANC Views on Nuclear Issues

*MB1610124592 Johannesburg Channel Africa Radio in English 1000 GMT 16 Oct 92*

[Text] The African National Congress [ANC] says it believes Africa should be nuclear-free, and that a future South African government will have to deal with the nuclear capacity of the country in a responsible way.

Speaking on nuclear issues at this week's ANC Forum on Environmental Policy, Prof. Albie Sachs of the organization's environmental desk said the whole issue was shrouded in secrecy.

He said the public had the right to know whether South Africa had developed or tested a nuclear bomb, and if it was selling nuclear materials to other countries.

Prof. Sachs said nuclear power was a highly sensitive issue, which would have to be discussed nationally and internationally by a future government.

### IAEA Finds No Proof of Undeclared Nuclear Facilities

*MB2210163792 Johannesburg Radio South Africa Network in English 0500 GMT 22 Oct 92*

[Text] The International Atomic Energy Agency [IAEA] says it has no information suggesting that South Africa has any undeclared nuclear facilities or material. South Africa, which has for years been suspected of possessing nuclear weapons, signed the Nuclear Nonproliferation Treaty in July 1991, and an inspections agreement with the agency later. The director general of the IAEA, Mr. Hans Blix, said a number of inspections have been carried out on South African nuclear facilities and at locations outside declared facilities. The agency had found no evidence that the inventory was incomplete.



## State Outlines Policy on Environment, Development

40101001A Beijing CHINA DAILY (Opinion)  
in English 18 Sep 92 p 4

[XINHUA report: "State Outlines Policy on Environment"]

[Text] The Chinese Government on Wednesday approved and published a report outlining China's policies and measures with regard to problems relating to the environment and development.

The report was compiled by the Foreign Ministry and the State Administration for Environmental Protection as part of its response to the UN conference on environment and development, during which China signed two world conventions.

The policies and measures outlined in the report include: pursuing the strategy of sustainable development; controlling industrial pollution; carrying out comprehensive controls of urban environments; raising the utilization rate of energy and changing the energy consumption structure; popularizing eco-agriculture and planting trees to protect biodiversity; strengthening environmental science and developing environment-related industries; using economic means to protect the environment; strengthening education and heightening the awareness of the environment of the whole nation; perfecting the legal system associated with the environment; and working out China's plan of action in line with guidelines laid down by the international environment conference.

The document urges governments at all levels to formulate strategies for sustainable development. It gives full attention to environmental protection, specifies targets and measures and plans to incorporate them into long and medium-term development plans as well as annual plans.

It says the traditional development model—characterized by huge consumption of resources and extensive operations—have done great harm to the environment and jeopardized development itself.

The document says governments at all levels should exercise strict control over new projects and ban the construction of projects that use outdated technology and equipment, the major sources of industrial pollution. It calls for special attention to the township industries which might cause serious pollution and for the banning of wanton exploitation of natural resources.

The document says China will abide by the climate convention and control its discharge of carbon dioxide by adopting economizing on energy, by accelerating the construction of hydropower and nuclear power plants and by encouraging the development and use of renewable and clean forms of energy, including solar energy, wind power, geothermal resources, tidal power and biomass resources.

To protect biodiversity, the document says China will further expand the areas of natural reserves and

strengthen their management and control and establish centres to protect and multiply rare species of wildlife and plants. It says the State will stringently enforce the laws and severely punish transgressors.

On the protection of natural resources, the document says the State will levy taxes on the use of resources and the protection of the environment. The State will establish an economic accounting system that will incorporate the use of natural resources and protect the environment so that market prices will accurately reflect the environmental cost of economic activities.

The document regards the level of environmental awareness as an important hallmark of social progress and has urged all departments and the mass media to stress this on all occasions.

The document says the State Council will work out a plan of action for the protection of the environment and incorporate it into the Eighth 5-Year Plan and the Ninth 5-Year Plan for execution.

## Report Views Progress in Oil Prospecting, Exploitation

HK1410092192 Beijing RENMIN RIBAO in Chinese  
30 Sep 92 p 1

[Dispatch by reporters Wu Changsheng (0702 7022 3932) and Fei Weiwei (6316 0251 0251): "China Makes New Progress in Oil and Gas Prospecting"]

[Text] Beijing, 29 Sep (RENMIN RIBAO)—This year, China has further stepped up its pace of opening up and cooperation with the outside world regarding its oil industry. Relevant persons in charge of the China National Petroleum Corporation said today that, while China's oil industry is continuously introducing advanced foreign technology, it has stepped out of the country and is vigorously participating in the prospecting and exploitation of international oil resources. At present, China has obtained the right to exploit an oil field in Canada, has joined in the purchase of a small tract of an oil field in California, and is cooperating with the world's nine largest oil companies in researching technology for oil sand exploitation, among other developments.

It has been learned that China's oil industry development has had the following new characteristics since the beginning of the year:

—Despite the serious natural disasters that have occurred at oil fields over the past eight months, China surpassed its planned oil and gas output every month: Oil output from January to September reached 103.61 million tons, an increase of 800,000 tons over the corresponding period last year, and natural gas output reached 11.3 billion cubic meters.

—The preliminary plan to stabilize oil production in eastern China and develop that in western China has been formed. The experience of the Daqing Oil Field has been conveyed to other oil fields in eastern China,

and a way of stabilizing the oil output of old oil fields has been found. The three new oil fields of Xiazijie, Lunnan, and Shanshan have been built and put to use; and they are able to produce 2.5 million tons each year. Moreover, primary-stage preparatory work for the full exploitation of the three new oil fields of Qiuling, Donghe, and Cainan has been well prepared.

—With the help of advanced technology, this year's output of viscous crude oil can break the record of 10 million tons. Subsurface operations can increase an additional output of over 10 million tons, approaching the highest output of the past five years.

—Strengthen scientific management, reduce protective subsurface operations, and increase the well-opening rate. From January to August, 7,358 new oil and water wells were added, and over 500 new heads were opened in old oil fields.

In addition, better progress has been made in oil and gas prospecting this year as compared with last year; work progress has been synchronized with the timetable; and well testing and drilling footage have increased 5 percent over the same period last year. A number of important achievements have been made in prospecting three basins in western Xinjiang, demonstrating the huge potential of China's large and medium oil and gas fields. A number of new petroliferous areas have been found in the old oil areas of eastern China. Natural gas prospecting has been even more productive, and it is expected that, by the end of the year, the proven reserves can reach five times those set out in the state plan, enabling the Eighth Five-Year Plan to be completed three years earlier.

### China Battles Hard To Clean Up Environment

40101003A Beijing CHINA DAILY (Opinion)  
in English 8 Oct 92 p 4

[Text] As China's economic development gains speed, so does the striving for a clean environment.

Investment in environmental protection, legislation backed by stiff penalties, and a massive greening of the land are among the government's moves. Environmental protection has been a basic policy since the heady days of development in the 1980s.

But since then the screws have been tightened further. Four laws and more than 20 regulations now form the basic legal framework for the protection of China's environment.

A law stipulates that any new or renovated plant must install anti-pollution devices.

Polluters face closure or a fine of between 5,000 and 20,000 yuan (\$900 to \$3,700), and must remedy the problem by a certain deadline.

Meanwhile, the country is digging deep into its pockets to finance the clean up.

In the present Eighth 5-Year Plan period (1991-95), China, despite its tight budget, plans to spend 80 billion

yuan (\$15 billion) on environmental protection, nearly double the amount for the previous five-year period.

Qu Geping, director of the State Environmental Protection Agency, said most of the money is being used to find cleaner energy to replace coal, a major source of air pollution.

Coal makes up 74 percent of China's total energy supply. Seventy percent of dust emissions and 90 percent of discharged sulphur dioxide come from coal burning.

China produces 1 billion tons of coal annually and a full three-fourths is used for heat.

As a result, its industry discharges an annual average of 13.14 million tons of soot and 16.22 million tons of sulphur dioxide.

To reduce pollution caused by coal burning, environmental planners want the country's tens of thousands of industrial boilers renovated and more central heating facilities built to replace scattered coal-fired boilers.

In Beijing, for example, where air pollution is mostly caused by burning coal in boilers and furnaces for heating, city planners have shut down about 3,500 boilers over the past few years.

The city's central heating system has increased its supply by 85,000 households. And 90 percent of Beijing dwellings now have piped gas.

In another development, the city is building a 32-kilometre-long heat transmission pipeline from an outlying power plant to the western part of the city.

When completed in 1996, the World Bank-funded project, costing \$132 million, will provide heat and hot water to about 800,000 people, further reducing air pollution from burning coal.

China also plans to use more clean energy, such as hydropower and nuclear energy.

By 2000, the installed nuclear-power capacity in China is expected to reach 6,000 megawatts and that of hydropower, 80,000 megawatts, double the present figure.

Last year China generated 123 billion kilowatt-hours of hydropower electricity, about one-sixth of its total.

The country is also pooling international funds to reduce air pollution. The United Nations Development Programme (UNDP) and the Global Environment Facility (GEF) are funding a \$25-million study on the environmental aspects of coal mining.

The project is designed to reduce the emission of methane into the atmosphere and to promote the use of methane gas as a high-quality energy resource.

While China is one of the largest emitters of coal-associated methane, which is much more toxic than carbon dioxide, only a few State-run mines are equipped to recover methane.



The government will work out detailed plans for the project in the next few months.

Meanwhile, rural China is sowing seeds for a better environment.

Since 1985, it has continued a massive campaign to improve soil conditions. The campaign includes planting more trees across northern China, on the flanks of the middle and upper reaches of the Yangtze River, in coastal areas, and around agricultural areas on the plains.

These areas have long suffered soil erosion, and are frequently hit by sandstorms and typhoons.

The northern China greening project, also called the "Green Great Wall," aims at planting a vast shelterbelt of trees that runs across northern China and covers about one-third of the country's total land mass.

To date, trees and bushes have been planted on 7.3 million hectares of barren land, protecting 11 million hectares of farmland.

Afforestation along the upper and middle reaches of the Yangtze started in 1989 and covers nine provinces. The ongoing programme has helped save an estimated 200 million tons of topsoil from being washed into the river each year.

Construction of the coastal shelterbelt started in the late 1950s. Now more than half of China's 18,000-kilometre coast is lined with trees. The shelterbelt protects some 2.47 million hectares of arable land from typhoons.

On China's plains, checkerboard-shaped tree belts in 508 counties protect more than 28 million hectares of farmland.

Gao Dezhan, the Minister of Forestry, said that because of the tree network, wind speed over the farmland is 30 to 40 percent slower, humidity five to 15 percent more, and grain output generally 10-20 percent higher.

China has also established 420 nature reserves, whose combined area makes up 4.5 percent of the country's total.

More than 200 animals and 350 rare plants have been designated as "endangered species." Among them are the giant panda and the ginkgo tree.

Despite some headway made in the right direction, the overall environmental challenge remains great. The nationwide waste water discharge is now 33.6 billion tons a year; acid rain has begun to wreak havoc in southwestern provinces, and air pollution remains serious in Northeastern China with its heavy concentration of industries.

The booming township enterprises, more conscious about immediate turnovers, are prone to taking liberties in discharging industrial waste without care for the environment.

The government is to enact special rules to tackle pollution by township enterprises. Additional economic incentives will also be introduced to promote environmentally-sound township industries.

Popular action born of an enhanced environmental awareness and continued efforts by the government are expected to stop further deterioration of the environment in China. (Xinhua)

#### **Drought-Stricken Areas Total 13 Million Ha Nationwide**

*OW1010144992 Beijing XINHUA in English  
1424 GMT 10 Oct 92*

[Text] Beijing, October 10 (XINHUA)—By the end of last month China's drought-stricken areas totalled nearly 200 million mu (about 13 million ha), up about 70 percent over the usual figure. The state flood control headquarters said here today.

In a press communique released today, the state flood control headquarters announced that heavy drought had hit a wide area of the country this summer, especially the areas along the Yellow, Huaihe and Haihe Rivers. The drought even cut off the water flow at Lijin, a hydro-metric station on the lower reaches of the Yellow River in east China's Shandong Province, for two months.

The drought created a serious threat to autumn crops such as rice and cotton. The drought did not ease until late August, when tropical storms appeared, according to the communique.

The communique also said that flooding, which caused great damage in east China in 1991, was comparatively light this year. Up to the end of September areas of 60 million mu (about four million ha) had been flooded, a 20 percent decrease compared to the normal figures.

Despite the severe water shortage, the water supply in cities and in drought-afflicted areas was assured due to the efforts of the local governments, the communique added.

#### **Liaoning Province Given Power To Manage Territorial Waters**

*OW1910083692 Beijing XINHUA in English  
0312 GMT 19 Oct 92*

[Text] Shenyang, October 19 (XINHUA)—The National Bureau of Oceanography of China recently granted the northeast Chinese province, Liaoning, the power to manage the country's territorial waters under its jurisdiction.

China's coastal waters used to be administered by the National Bureau of Oceanography. But in the future, the country will step by step shift the responsibility to local provincial governments.

So far Liaoning is the third province, following Hainan and Hebei, which was granted the power to take overall charge of its own coastline, and nearby waters and islands. The province can also tackle matters such as dumping rubbish, exploration of sea oil, the installment of ocean floor cables on its own.

The reform program helps the local governments to display their own initiatives in enhancing the management of coastal waters, and speed up the exploitation of offshore resources, according to Yang Wenhe, deputy director of the bureau.

## REGIONAL AFFAIRS

**Japan Sea Countries Meet on Environmental Cooperation***OW1310235192 Tokyo KYODO in English 1402 GMT  
13 Oct 92*

[Text] Niigata, Oct. 13 (KYODO)—Five countries facing on the Sea of Japan opened a conference in Niigata Tuesday to discuss ways to cooperate in solving environmental problems in the region.

Government officials in charge of environmental affairs from Japan, China, South Korea, Mongolia and Russia are attending the four-day conference hosted by Japan's Environment Agency.

On the opening day, representatives from each nation as well as from Niigata Prefecture, the United Nations Environment Program (UNEP), UN Development Program (UNDP), the Economic and Social Commission for Asia and the Pacific (ESCAP) made keynote speeches.

Xia Kunbao, an official of China's State Environmental Protection Bureau, urged Japan to provide technical and financial contributions to help China tackle various environmental problems.

He said China discharged 16 million tons of sulfur dioxide, which causes acid rain, in a one-year period in 1991 because of its heavy use of coal. He also said there is a fear of cave-ins across one-third of China's territory because of the depletion of groundwater.

Japan proposed holding such meetings regularly and the establishment of a secretariat and a network to exchange information.

The Niigata conference runs through Friday [16 October]. The participants will discuss international cooperation in fields such as air and water pollution, organizers said.

**ASEAN Agriculture, Forestry Ministers Agree on Cooperation***BK1310030992 Bangkok THE NATION in English  
13 Oct 92 p B16*

[Excerpt] Agriculture and forestry ministers of the ASEAN countries have agreed to strengthen cooperation to boost production in the region to meet the domestic and international demand for food, agriculture and forestry products.

The ASEAN ministers also agreed to join with the ASEAN Chamber of Commerce and Industry (ASEAN-CCI) and other groups to promote 12 ASEAN agricultural products in non-ASEAN markets.

The products are frozen chicken meat, frozen prawns, canned pineapple, palm oil, rubber, forestry products, tapioca, coconut oil, canned tuna, carageenan, cocoa and pepper.

Joint action by the ASEAN ministers had been successful in the past when the European Community (EC) was persuaded to open its markets to carageenan from the Philippines.

The agreements were decided at the 14th Meeting of the ASEAN Ministers on Agriculture and Forestry on Oct 8-10 in Bandung, Indonesia.

On environmental issues, the ministers expressed concern over the unilateral action by Austria to impose a mandatory labelling requirement on all tropical timber products imported from Indonesia.

They supported Indonesia and Malaysia continuing tropical timber production, but it must be done under the terms of the agreement adopted at the recent Rio United Nations Conference on Environment and Development. [passage omitted]

**Japanese, Malaysian Ministers Discuss Plutonium Shipment, NAFTA***OW1510130392 Tokyo KYODO in English 1103 GMT  
15 Oct 92*

[Text] Tokyo, Oct. 15 (KYODO)—Malaysian Foreign Minister Abdullah Badawi on Thursday [15 October] indicated he was concerned over the prospect of Japan shipping plutonium through the Strait of Malacca, Foreign Ministry officials said.

Abdullah, in talks with Foreign Minister Michio Watanabe, also urged Japan to agree to the formation of an East Asian Economic Caucus (EAEC) to boost the position of Asian countries as economic blocs emerge in Europe and North America and as the General Agreement on Tariffs and Trade (GATT) is failing to prevent protectionism, they said.

Abdullah, who arrived in Tokyo on Wednesday for a four-day stay after visiting China, was quoted as saying that Malaysia is concerned about the frequent accidents in the narrow, congested and pirate-infested Strait of Malacca, between the Malay Peninsula and Indonesia's Sumatra Island.

He told Watanabe that Malaysia is especially keen to prevent accidents in the commercial shipping lane involving spills of "dangerous substances." Last month there was a major oil spill there after a collision between an oil tanker and a container ship.

Watanabe, sensing his counterpart was alluding to Japan's possible shipment of radioactive plutonium through the 1,000-kilometer strait, said Japan is taking numerous safety measures to prevent accidents, but would nevertheless "take into full consideration" Malaysia's concerns, officials said.

Malaysia, Indonesia, and Singapore have objected to the Japanese ship Akatsuki Maru using the strait on its homeward journey from France in November. The ship is to carry a ton of weapons-grade plutonium for use in Japanese power stations. Japan has said it will avoid all territorial waters.

Abdullah repeated a call he made in a meeting Wednesday with International Trade and Industry Minister Kozo Watanabe for a conference of the countries around the strait and major shipping nations to look into how the shipping community could contribute to maintaining the straits. An average of 600 ships a day sail through the strait.

Officials said Watanabe did not take a position on the proposal, saying only that Japan, which is a major user of the waterway, wants to cooperate to ensure safe navigation. He also said international efforts should be made to combat the problem of piracy there.

Abdullah was quoted as saying that the six-member Association of Southeast Asian Nations will be meeting soon at the working level to discuss the "modalities" of the Malaysian-proposed EAEC, which he said has recently gained relevance following the formation of the North American Free Trade Agreement (NAFTA).

Officials said Watanabe replied that for the EAEC to be acceptable, it is essential to convince the United States and other countries that the body would not be a closed trading bloc.

Japan has adopted a cautious stance toward the proposal, partly due to the strong objections of the U.S., which along with other non-Asian nations would be excluded from the body.

The U.S. has charged the EAEC would exacerbate protectionism by "drawing a line down the center of the Pacific Ocean."

Malaysian Prime Minister Mohamed Mahathir has accused Washington of practicing a "double standard" by forming NAFTA and opposing the EAEC. Mahathir, who arrived in Japan on Thursday for a weeklong unofficial visit, warned in Hong Kong on Wednesday that despite pressure from Washington, "if Japan doesn't join, Japan is going to be out in the cold."

#### **China, Japan, South Korea Hold Marine Resources Symposium**

*OW2110100892 Beijing XINHUA in English  
0935 GMT 21 Oct 92*

[Text] Beijing, October 21 (XINHUA)—A scientific symposium on marine and aquatic resources is being attended in Beijing by experts from China, Japan and South Korea. They are discussing systematic research on regeneration.

The three countries have shared the aquatic resources of the Yellow Sea for centuries. In the past few years, the resources have been reduced sharply due to excessive fishing.

The three countries have made efforts to increase the breeding stocks, but the measures have not proved very effective because there was no coordination of effort.

In a joint move to protect the aquatic resources, the countries have held two meetings to discuss ways to increase breeding stocks.

## **AUSTRALIA**

### **Scientists Link Rice Crop Damage to Ozone Loss**

*BK1110022892 Hong Kong AFP in English 0137 GMT  
11 Oct 92*

[by Robert Holloway]

[Text] Sydney, Oct 11 (AFP)—Tropical cash crops, in particular rice, could be at risk from increased ultra-violet [UV] radiation as the earth's protective ozone layer diminishes, Australian scientists warned.

Jan Anderson of the Commonwealth Scientific and Industrial Research Organisation (CSIRO) in Canberra said preliminary research done in Australia had "quite alarming" implications for Third World countries.

"Until two years ago, people believed that tropical plants would not be affected because they are used to high levels of UV near the equator," she said in a telephone interview.

But recent studies by the CSIRO showed that rice was among plant species whose growth appeared to be impeded by increased doses of UV radiation, she said.

Ultra-violet light occurs naturally, causing (among other things) suntan; the shorter its wavelength the greater the risk of damage to the cells, pigments and proteins of living matter.

Bruce Forgan of the government's Bureau of Meteorology in Melbourne explained that UV-A has a wavelength of 320-400 nanometers, just beyond the spectrum of visible light, and is harmless; UV-B has a wavelength of 280-320 nanometers and UV-C has a wavelength below 280 nanometers.

No UV-C radiation ever reaches the earth's surface because it is absorbed by oxygen, but small doses of UV-B get through the atmosphere.

Anderson said "different plants are affected by UV-B to differing degrees."

Cotton seems to be unaffected, while wheat is a little affected. Rice is "sensitive," but the plants most affected in laboratory tests were peas.

"In just eight days, the plants exposed to UV-B lost up to 55 percent of their chlorophyll, the compound which traps the sun's energy," Anderson said.

"Plants not receiving UV-B actually increased their chlorophyll by 12 percent."

Anderson is one of only three scientists in Australia studying the adverse effect of UV on plants, and said that little research had been done anywhere in the world.

"Plants make their own sunscreens," she said and explained that some species accumulate UV-absorbing compounds in their leaves to make a protective layer over the chloroplasts—the cells which convert sunlight to growth in a process known as photosynthesis.

Anderson said that if more research was done "perhaps plants could be genetically engineered to resist higher doses of UV-B."

UV-B is absorbed by ozone, and some scientists fear the level of radiation has increased because the ozone layer in the upper atmosphere is thinning, partly due to emissions of industrial gases.

The best publicised example of ozone depletion is the hole which appears in the ozone layer over Antarctica during the southern spring in September and October.

But Forgan said "while the hole is a very interesting phenomenon, the critical factor is the gradual decline in ozone over the globe."

Satellite readings show that the earth's ozone has diminished by about five percent over the past ten years, he said.

"We can calculate the amount of extra UV-B this should produce," he said, "but we have not been able to measure the exact increase that has actually occurred."

This is because UV-B radiation is affected by other factors such as cloudiness and varies from one latitude to another, growing stronger the closer to the poles.

The CSIRO asserted in a statement that "UV-B has increased by four percent in Darwin (northern Australia) and by 10 percent in Hobart (in the southern island state of Tasmania) since the 1980s and is accelerating."

## JAPAN

### Environment Agency Drafts Principles for Enterprises

*OW1210103792 Tokyo KYODO in English 0813 GMT 12 Oct 92*

[Text] Tokyo, Oct. 12 (KYODO)—The Environment Agency drafted guideline principles on Monday for enterprises planning environmental measures as part of their management policies, agency officials said.

The agency will establish final principles by the end of November after hearing views from private and economic bodies, including the powerful Japan Federation of Economic Organizations (Keidanren), the officials said.

The draft calls for enterprises intending to undertake environmental measures to stipulate their targets, and enforcement plans and systems, they said.

The principles also include a periodic internal inspection of such enterprises by a third party and the publication of reports on the results of their environmental measures by the enterprises themselves, the officials said.

According to an agency survey conducted last year on the nation's 2,000 or so listed companies, to which 15.3 percent replied, some 120 firms have already established environmental rules as part of their management policies, the officials said.

### Industrial Site Contracts Drop 20.9 Percent

*OW1210085592 Tokyo KYODO in English 0822 GMT 12 Oct 92*

[Text] Tokyo, Oct. 12 (KYODO)—Contracts for industrial sites in Japan continued to decline in the first half of the year, dropping 20.9 percent from the first half of 1991 to 1,387, the Ministry of International Trade and Industry said Monday.

A ministry official attributed the sharp decline, continuing a downtrend that began in late 1989, mainly to the nation's economic slowdown and a lack of sites for industrial development.

The area of sites contracted from January through June fell 34.1 percent from the same period a year before to 1,542 hectares, according to a ministry survey.

The semiannual survey covered sites of more than 1,000 square meters contracted for construction of factories or offices by manufacturing, electric power, gas, and heating supply concerns nationwide.

The survey found a slight increase for sites contracted by food and metal products companies.

But industries requiring rather large sites refrained from buying, with contracts by electric machinery businesses dropping 44 percent from a year before.

The ministry official expressed pessimism on prospects for the second half of the year, saying corporate activity remains at a standstill.

He said, however, that potential demand for industrial sites is strong and would help industrial location recover in the long term.

### MITI To Help Waste Paper Industry Restructuring

*OW1510114992 Tokyo KYODO in English 1128 GMT 15 Oct 92*

[Text] Tokyo, Oct. 15 (KYODO)—The Ministry of International Trade and Industry (MITI) plans to help Japan's waste paper industry in its five-year restructuring project starting at the end of this month, MITI officials said Thursday.

The industry has been facing hard times due to a decline in demand and prices for waste paper in Japan.

The industry's association, Japan Waste Paper A.C., has plans to reorganize and revitalize the industry with links among companies, improved facilities or introduction of new technologies, and development of new products.

The plan is expected to take five years and cost a total of 153 billion yen.

MITI has agreed to help the plan in order to encourage resource recycling, the officials said.

The association will submit the entire plan to MITI soon, and public financial organizations such as Japan finance Corp. for small businesses will provide the funds at relatively low interest rates, the officials added.



They said that currently 52.3 percent of the paper produced in Japan is recycled paper, and MITI plans to raise the percentage to 55 percent by 1994.

There are about 1,100 companies operating in the waste paper industry, but most are small in scale and are facing difficulties in securing a work force and in modernizing their facilities, the officials said.

### **Environment Agency Head Pressured on Nagara Dam Project**

*OW1510095492 Tokyo KYODO in English 0940 GMT 15 Oct 92*

[Text] Tokyo, Oct. 15 (KYODO)—Political power broker Shin Kanemaru two years ago threatened an environment agency chief who strongly opposed a controversial dam construction project at Nagara River in central Japan, the former chief said Thursday.

Ishimatsu Kitagawa, then director general of the environment agency, said in an interview with KYODO NEWS SERVICE that Kanemaru telephoned him about three times in 1990 to criticize him for opposing the project while he was a cabinet minister.

The construction of the dam on the Nagara River in Nagashima, Mie Prefecture, originally won cabinet approval in 1965.

After a 1964-1968 environmental impact study, the construction ministry began constructing the dam in July 1988 to prevent floods and provide water to nearby industrial areas.

Kitagawa said the fiercest call from Kanemaru came one week after Kitagawa observed the construction site in November 1990 for the first time as the head of the environment agency and expressed his concern over the project.

Kitagawa had also voiced concern in late February 1990, soon after he was appointed to the post, saying construction of the dam would trigger environmental damage such as water pollution and pointed out the danger of typhoons washing away the bank at the mouth of the river.

Later, at the end of December, Kitagawa urged the construction ministry to conduct further studies of the effects the dam would have on the water and wildlife in the area.

According to Kitagawa, Kanemaru asked in the phone call if Kitagawa understood the importance of the cabinet decision on the project, and said the dam was necessary there and should be constructed soon.

Kanemaru, then the head of the ruling Liberal Democratic Party's largest faction led by former Prime Minister Noboru Takeshita, became very angry when Kitagawa argued that the cabinet decision was made 20 years ago and pointed out that the environment agency had not been established at the time, Kitagawa said.

The environment agency head told Kanemaru he decided to oppose the project as the head of the agency responsible for protecting the environment and that the public would not follow politicians who did not keep up with the times.

Kanemaru hung up when Kitagawa said he would not succumb to threats, Kitagawa recalled.

He also indicated that Kanemaru had suggested that if Kitagawa continued to oppose the project, there would be some impact during the election. But he did not elaborate further on the matter.

Kitagawa said the construction ministry must have been concerned that the project could have been halted at the time and the only person who could have put pressure on him directly was Kanemaru.

Environmentalists and residents of the area oppose the dam project, which is estimated to cost a total of 150 billion yen, about the same cost of building the new Tokyo metropolitan government building.

The Nagara River, one of Japan's largest rivers, is rich in fish and plant life, some of which is regarded as rare or precious.

### **UNEP To Set Up Environmental Technical Centers in Osaka, Kusatsu**

*OW2110134992 Tokyo KYODO in English 1242 GMT 21 Oct 92*

[Text] Tokyo, Oct. 21 (KYODO)—The United Nations Environmental Program (UNEP) will sign a contract with the Japanese Government on October 30 to set up international environmental technical centers in Osaka and Kusatsu in Shiga Prefecture, officials said Wednesday.

The UNEP Executive Director, Mostafa Tolba, will attend a signing ceremony in Osaka, the officials said. The UNEP is the third UN organization to establish facilities in Japan.

The centers, to be completed by 1994, will promote research and investigations needed to transfer environmentally safe techniques to developing countries.

The environmental group's council in May 1991 accepted an invitation that Japan announced at the 1990 summit meeting of seven leading industrialized nations in Houston, Texas.

To commemorate the establishment of the new facilities, an international symposium will be held in both cities October 27-30 with environment experts from 23 countries attending, the officials said.

### **Tokyo Pledges Environmental Aid to Indonesia**

*OW2210134892 Tokyo KYODO in English 1154 GMT 22 Oct 92*

[Text] Jakarta, Oct. 22 (KYODO)—Japan pledged Wednesday a new aid program, termed the "Green Aid Plan," for Indonesia to develop environmentally sound industries.

Indonesian Industry Minister Hartarto told reporters after a meeting with Japan's International Trade and Industry Minister Kozo Watanabe that next April there will be "cooperation to develop industries that are not destructive to the environment."

He said Japan will provide assistance in the form of know-how and funds for the study of the program.

Hartarto said support industries, such as those for machinery and fertilizer, will be developed under the aid.

Meanwhile, after meeting with President Suharto, Watanabe told reporters that the two held talks on Indonesian-Japanese cooperation in general, and the economy in particular.

He said they discussed how to prop up supporting industries to spur economic growth in Indonesia, while at the same time preserving the environment.

Watanabe urged Suharto to improve Indonesia's "investment climate" for Japanese companies seeking to increase activities in the country.

Asked what constraints Japanese companies had in Indonesia, Watanabe said Japan seeks improvement in Indonesia's economic structures, such as electricity and ports, and deregulation of administration.

## SOUTH KOREA

### Seoul To Host 1993 Asian States' Environmental Conference

*SK1010123792 Seoul YONHAP in English 0815 GMT 10 Oct 92*

[Text] Seoul, Oct. 10 (OANA-YONHAP)—South Korea and the U.N. Economic and Social Commission for Asia and the Pacific (ESCAP) will jointly sponsor the first inter-governmental Northeast Asia environment consultation conference in Seoul next February, the Foreign Ministry announced Saturday.

The ESCAP Secretariat will send out invitations next week to North Korea, China, Japan, Russia and Mongolia, Ministry officials said.

The conference, the first of its kind in the Northeast Asian region, will discuss specifics to environment cooperation projects addressed sporadically at international organizations such as the U.N. Environment Program (UNEP) and the U.N. Development Program (UNDP) and establishment of the "North-east environment consultative board" to oversee regional projects.

"Marine pollution, environment technology cooperation, preparations against environmental emergencies, and information exchange are some of the topics under consideration," one official said.

"Seoul hopes for concrete agreements on solving pollution spread over the Korean peninsula from China and protecting the Yellow Sea from industrial waste," he said.

## MALAYSIA

### Minister Scores Austria's Tropical Wood Labelling Law

*BK1010144192 Kuala Lumpur Radio Malaysia Network in English 1330 GMT 10 Oct 92*

[Text] Malaysia will cooperate with other ASEAN countries to act against Austria which has implemented a law on labelling tropical wood products. The Minister of Primary Industries, Datuk Sri Dr. Lim Keng Yaik, said the action taken by Austria is not in keeping with the forestry principle collectively agreed at the United Nations Conference on Environment and Development, UNCTAD, in Rio last June.

The labelling which was approved by the Austrian Government on the first of last month is a form of discrimination against trade. He said Malaysia will take all kinds of measures including legal, diplomatic and political channels to counter such action to protect its tropical wood. The minister told newsmen this after opening Quality Day and the 7th anniversary of the Forest Research Institute of Malaysia in Kepong, near Kuala Lumpur.

He added that though Austria imported a small amount of Malaysian tropical wood, its action might cause other countries to take similar steps in labelling tropical wood.

### Malaysia, Netherlands To Set Up Forest Management Committee

*BK1310073292 Kuala Lumpur Radio Malaysia Network in English 0600 GMT 13 Oct 92*

[Text] Malaysia and the Netherlands have agreed to set up a high-level committee to undertake and put into action the International Tropical Timber Organization's guidelines on tropical forest management. The minister of primary industries, Datuk Sri Dr. Lim Keng Yaik, says the committee will comprise experts, government officials, scientists, producers, and importers from both countries. It is expected to convene its first meeting to exchange views within the next two to three months. The committee will give an assurance to tropical timber consumers in Europe, and in particular the Netherlands that Malaysian timber comes from sustainable sources. Datuk Sri Dr. Lim told newsmen this after talks with visiting Netherlands Minister for Foreign Trade van Rooy in his office in Kuala Lumpur.

## TAIWAN

### Montreal Protocol Members Seek Way To Admit Taipei

*OW1410092692 Taipei CNA in English 0755 GMT 14 Oct 92*

[Text] Taipei, Oct. 14 (CNA)—Major member nations of the Montreal Protocol are seeking ways to enable Taiwan to join the international environmental protection organization, a Canadian official said here Tuesday.

Ronald Berlet, newly-appointed director to the Canadian Trade Office in Taipei, said if Taiwan cannot become a contracting party because of Beijing's opposition, they (the member nations) will at least help Taiwan join the Montreal Protocol under certain rules of the protocol.

Berlet said signatory nations of the Montreal Protocol have also accelerated efforts to phase out the ozone-depleting chlorofluorocarbons (CFCs) by the end of 1995, four years ahead of international deadlines set by the protocol.

"A resolution confirming the new 1995 deadline to completely end the use of CFCs is expected to be passed during the upcoming general meeting scheduled for Nov. 23 in Copenhagen," he said.

A Taiwan mission, to be composed of officials from the Industrial Technological Research Institute and the Environmental Protection Administration (EPA), will leave for Copenhagen on Nov. 15 to attend the Montreal Protocol general meeting as an observer, EPA Director General Chao Shao-kang said.

"The Republic of China [ROC] wants to join the Montreal Protocol and is willing to abide by international rules governing environmental protection," Chao said.

Vice Economics Minister Yang Shih-chien said it is important for Taiwan to become a contracting party to the Montreal Protocol.

"We hope we will at least be regarded as one so as not to be sanctioned for failing to implement the accord," he added.

By 1995, when the rules to end the use of CFCs take effect, about half of Taiwan's exported goods worth US\$100 billion will be severely affected, Yang said.

CFCs has been widely used as coolant in cars, air conditioners and refrigerators. It is also a key material for electronic components cleaning.

#### **Timetable for CFC Phase-Out Outlined**

*OW1510102292 Taipei CNA in English 0823 GMT  
15 Oct 92*

[Text] Taipei, Oct. 15 (CNA)—The Environmental Protection Administration (EPA) has worked out a timetable to gradually phase out the ozone-depleting chlorofluorocarbons (CFCs) on Taiwan.

According to the timetable, EPA officials reported, the government will completely ban the use of CFCs by 1996 after scheduled slashes of 30 percent this year, 50 percent in 1993, 80 percent in 1994, and 85 percent in 1995. The consumption of 10,159 tons in 1986 will be taken as a base for comparison, they said.

CFCs has been widely used as coolant in cars, air conditioners, and refrigerators. It is also a key material for electronic components cleaning.

The officials pointed out that the EPA has also mapped out measures to govern coolant recycling and to impose air pollution control fees in order to deter the use of CFCs.

Moreover, they said, the Industrial Technology Research Institute and the manufacturing sector are stepping up efforts in research and development of CFC substitutes.

All the efforts are aimed at complying with the rules of the Montreal Protocol, which advocates protection for the earth's ozone layer and might advance the complete phase-out of CFCs to 1996, the officials noted.

Commenting on people's fear that Taiwan might face trade sanctions if it cannot become a contracting party to the Montreal Protocol, EPA Director General Chao Shao-kang said optimistically that they need not worry too much about it.

Many countries like the United States, Canada, Britain, France, Germany, and Denmark have acknowledged Taiwan's efforts in environmental protection, Chao pointed out. "They don't think Taiwan should be sanctioned just because it is not a member of the protocol," he stressed.

He pledged that this country will continue its efforts to join the Montreal Protocol.

#### **Government To Shield Businesses From Environmental Sanctions**

*OW1610083492 Taipei CNA in English 0809 GMT  
16 Oct 92*

[Text] Taipei, Oct. 16 (CNA)—The government will seek ways to protect domestic industries from trade sanctions by member nations of the Montreal Protocol, a ranking official said Thursday [15 October]. Chao Shao-kang, director general on the Environmental Protection Administration (EPA), reported that the decision was reached at a meeting among Foreign Minister Chien Fu, Economic Affairs Minister Hsiao Wan-chang, and Chao himself.

In order to make known Taiwan's efforts in environmental protection, he pointed out, the government will dispatch a delegation to attend the general meeting of the Montreal Protocol to be held in Copenhagen Nov. 15. The director general, however, conceded that there are little possibilities that Taiwan might become a contracting party equivalent to the protocol this year.

Instead, the government will try its best to win written support from the protocol's signatory nations to safeguard the interest of Taiwan industries, Chao said. People here fear that Taiwan might face trade sanctions if it cannot become a contracting party or a contracting party equivalent to the protocol, which advocates protection for the ozone layer of the earth.

Taiwan, which has been abiding by international rules governing environmental protection, should not be sanctioned just because it is not a member of the protocol, he noted. He also stressed that under no circumstances

should Taiwan enterprises use Mainland China's quota of ozone-depleting chlorofluorocarbons (CFCs) to avoid possible trade retaliations.

CFCs has been widely used as coolant in cars, air conditioners, and refrigerators. It is also a key material for electronic components cleaning.

This country has worked out a timetable to gradually end the consumption of CFCs on Taiwan in compliance with the requirements of the Montreal Protocol, which might pass a resolution at its upcoming general meeting confirming complete CFC phase-out by 1996, he said.

According to the timetable, the government will completely ban the consumption of CFCs by 1996 after scheduled slashes of 30 percent this year, 50 percent in 1993, 80 percent in 1994, and 85 percent in 1995.

In a new effort to reduce the impact to the minimum, the Industrial Development Bureau said that it will encourage local manufacturers to use CFC substitutes through soft loans and exemption of customs duties.

The EPA has also mapped out measures to govern coolant recycling and to impose air pollution control fees in order to deter the use of CFCs. Moreover, the board of foreign trade announced that it will start next year placing more restrictions on CFC imports.

## VIETNAM

### Massive Coastal Swamp Shrimp Farming May Undermine Ecosystem

92WN0811A Hanoi VIETNAM NEWS in English  
17 Sep 92 p 2

[Text] Experts from the State Commission for Sciences have warned against the on-going clearing of mangrove forests on newly deposited land for shrimp farming in Minh Hai province.

They said the ecosystem on the new alluvium deposits along the coast was very likely to be destroyed as was the case at other areas in the central and southern parts of the country.

The coastal swamps threatened by complete destruction in question are located in Ngoc Hien district on the Ca Mau Peninsula where annual deposit of sand and alluvium soil makes it possible for the land's end to expand at a pace of some 100 square meters a year.

As the new swamps, sparsely covered with mangroves formed over the years, have increased to about 1,600 hectares, the provincial authorities see it fit to mark off about 300 hectares for shrimp farming.

Early this year it was already decided that only 100 hectares would be allocated to local farmers, but the limit was ignored. Lured by quick profits, other farmers have flocked to the new land to get a share. A new settlement has been formed and is growing at the cost of vast stretches of mangroves.

Ecologists who just returned to Hanoi after an inspection tour of that southernmost province said they had urged

the authorities there to stop deforestation. They believe a small portion of the new land may be used commercially but insist that efforts must be made to preserve the new fragile ecosystem by planting new trees and strictly prohibiting trespassing in the rest of the area.

The ecologists said their intervention might be a little late but it was better than never because coastal land erosion caused by tidal movements in southern and central provinces is posing a serious threat to the environment.

Within two years, tides have washed away 300 meters of sea dyke reinforced with concrete blocks and stones in the district of Go Cong Dong, Tien Giang province, about 60 kilometers south of Ho Chi Minh City.

In the districts of Vinh Cua and Long Phu, Tien Giang province, and in Ganh Hao, Minh Hai, erosion is taking place at a much faster rate because of the expansion of shrimp farming, the experts said, adding that encroachment by sea water has also threatened saltfields in Thuan Hai, where hundreds of houses recently collapsed on a stretch of a dozen kilometers or so.

### Ministry Unveils Plan for Sustainable Forestry

BK0910151392 Hanoi VNA in English 1441 GMT  
9 Oct 92

[Text] Hanoi, Oct. 9 (VNA)—The Ministry of Forestry is mobilising forest research institutions and government agencies for highland development in making master plans for sustainable economic development in seven different zones involving most of the country's forest-related activities, announced the ministry's officials.

The seven zones under review are the northwestern region, the midland in northern Vietnam, the southern part of northern Vietnam, the central coastal area, the central highlands, the eastern part of southern Vietnam, and the submerged area in the western part of southern Vietnam. In addition, smaller development projects will be drawn up for more than 40 forest-covered provinces, forestry officials said.

These projects will cover a wide range of activities from afforestation, forest protection and exploitation, to resettlement of nomadic minority people. Special-interest projects will focus on the protection of head-water forests coastal forests and natural parks as well as timber forests for use in the paper-making industry, construction and mining sectors. In the long run, [word indistinct] development of projects will be prepared for better use of forests and barren woodland which are still left waste. These projects are also open to international organisations, foreign companies and NGOs [nongovernmental organizations] willing to invest in the forestry domain.

In the immediate future, efforts will also be made to complete an inventory of projects relating to regional integrated economic development in forestry, agriculture and industry that go hand in hand with the resettlement of nomadic people in the more than 100 mountain districts. Feasibility studies will start early next year for some of the above-mentioned projects, forestry officials said.



## ALBANIA

### Deputies Approve Agreement With Austria, Forestry Bills

*AU1410214892 Tirana ATA in English 0901 GMT  
14 Oct 92*

[Text] Tirana, October 14 (ATA)—At the October 13 morning sitting, the deputies went on examining the draft law on the approval in principle the draft agreement between the Republic of Albania and the Republic of Austria for encouraging and protecting investments. They said that it is a type contract for all agreements to be reached between the two countries and is intended to grant concessions to foreigners as foreseen in this contract. The approval in principle and article per article being over, the deputies voted for the draft law in general as well.

Then the Assembly examined the draft law on forests and forest service police. Many deputies who took the floor laid the stress on the pressing need to endorse this draft law which has to do with the development of our forests. Under the communist regime, they said, the extensive development of agriculture was done to the detriment of forests, seriously harming ecology. The draft law being endorsed in principle, the deputies examined it article per article.

At the afternoon sitting, the Chairman of the Presidency of the People's Assembly Pjeter Arbnori briefed the deputies with a proposal submitted by 31 deputies on an amendment to the Article 14 of the Law on the Status of Deputy, which has to do with allowances of deputies under the conditions of price rise. The deputies endorsed this proposal.

Then the deputies discussed on the other articles of the draft law on forests and forest service police. The draft law was endorsed article per article and then in general.

The People's Assembly lasts till October 14 before noon.

## BULGARIA

### Background to Kozloduy Nuclear Plant Accidents Detailed

*AU1310105292 Sofia PODKREPA in Bulgarian  
6 Oct 92 pp 1, 3*

[Report by special correspondent Yuliana Boncheva: "Accidents at Kozloduy Due to Human and Technical Faults"]

[Text] A week after the two fires in Units Nos. 5 and 6 at the Kozloduy Nuclear Power Plant, a report was disseminated on "criminal negligence and a series of errors" that gave rise to a pre-critical situation of the Chernobyl type. The news caused full mobilization in the mass media and led to a wave of answers and explanations from the leaders of our national energy industry. Sad memories of recent winters and fears connected with the onset of the long winter nights injected feelings of panic among the population. However, it soon became clear

that the alarm was exaggerated and that the scare report on the situation at the nuclear power plant was a mixture of truth, exaggeration and distortion, guesswork, and lies. The whole of the standby equipment of Units Nos. 5 and 6 has not been destroyed, but part of it is out of action following the accidents on 22 and 23 September.

The main circuit breaker, which caused the start of the trouble at the "nuclear city", has a reputation for being a less than reliable device that often breaks down. Because of this, the experiment that was being conducted under the program failed. Had everything gone normally, the next steps would have been a 72-hour running test, the measurement of operating parameters, and, if these were found to be normal, the No. 6 Unit should have been put into service at full power. Now, the startup has been delayed indefinitely, and it is not clear whether the Russian partners will accept that the replacement of the burnt-out breaker is covered by the guarantee. An anonymous source at the Kozloduy plant has claimed that a letter exists prohibiting the experiment, but Kozloduy Nuclear Plant Manager Kozma Kuzmanov has stated that so far no such letter has been discovered. People at the plant suggest that this mysterious letter is a pretext for invalidating the guarantee claim.

Mr. Volkov, the head of the Russian team, is reported to have nonchalantly remarked that a document forbidding such a test has been in existence for years. It is absurd to draw comparisons with Chernobyl, said Mitro Yankov, head of the Operations Department, because neither the damaged unit nor the unsuccessful experiment are of the type used at Chernobyl. The Kozloduy incident is the exact opposite to what happened at Chernobyl, Mr. Kuzmanov claimed, because our plant demonstrated good safety capabilities and proved that it was made secure. The fault for this lies both with the equipment and human error. It all started with the failure of the circuit breakers, first in Unit No. 6, then in Unit No. 5.

Later on, subjective errors also came to light. According to Mr. Yankov, these were a result of the excessive self-confidence of the operating personnel on the one hand, and of the special psychological climate and the difficult working conditions on the other. The commission that is investigating the incidents has its report almost ready and the experts are making their final checks, Mr. Kuzmanov announced, promising that the results will be publicized. He is reported to have asked a French expert, who has been visiting Kozloduy recently, how the French authorities discipline operators who commit errors. We do not punish them at all, the Western specialist is said to have replied, but send them for further training. For the past two years, the staff at Kozloduy have not been subjected to any psychological tests in addition to all the other checks and tests. They are required to possess the qualities of cosmonauts. Whereas, in the case of the old reactor units Nos. 1-4, reaction time is up to 40 or 60 seconds, the operators of the two 1,000-Megawatt units have only 10 seconds to intervene from the moment they receive a fault indication signal if they are to be able to prevent damage....

Because of the accidents that caused material damage and the breakdown of Units Nos. 5 and 6, the staff of Electricity Generation Departments Nos. 1 and 2 at the Kozloduy Plant have been penalized through deductions from their salaries.

Mr. Yankov explained that the design project itself contains a provision with a bearing on what happened. As a result of some misunderstanding, details of the times for the standby supplies to the two reactors were

not entered in the right place in the project. He described as absurd and uninformed the claims that no inspection control existed for the three days following the incidents. This is impossible both in theory and in practice, he said, even in more serious situations. Here is a report on the state of the generating capacities at the Kozloduy Nuclear Power Plant, which recently celebrated its 18th birthday.

#### Information on the Condition of the Reactor Generating Units at the Kozloduy Nuclear Power Plant

| Reactor Number | Condition directly prior to accidents   | Condition at present  |
|----------------|---|---|
| 1              | Under repair and reconstruction according to program agreed with international consortium.  | Reconstruction and modernization continues. Unit planned to reenter service in mid-March 1993.  |
| 2              | Work on reconstruction and modernization of safety systems continues.   | Preparations under way for startup on or around 15 November 1992.   |
| 3              | Operating at reduced capacity of 54 percent. No. 5 turbogenerator operating at 215 megawatts. No. 6 turbogenerator shut down for planned annual overhaul. | Operating at 55-percent capacity and producing 225 megawatts of electric power. Soon to undergo planned annual overhaul.  |
| 4              | Unit shut down since 15 August for planned annual major overhaul and reloading with fuel.   | Planned annual overhaul and reloading with fuel nearing completion. Expected to reenter service at 55-percent capacity before 10 October, reaching full capacity by the end of the month. |
| 5              | Planned annual overhaul in progress, with no fuel reloading of active zone.   | Undergoing planned annual overhaul, expected to enter service around 20 October.  |
| 6              | Testing being carried out according to program.   | Reactor generating unit may be started up in about a month.   |

Accordingly, at the moment only the No. 5 turbogenerator of the No. 3 Generating Unit—jokingly nicknamed by the plant workers the "Pride of Tara"—is supplying power to our national power grid. It is soon to undergo its planned overhaul, but the experts specifically point out that this work will only start when Unit No. 4 has been restarted. By the end of October, if all goes well, Unit Nos. 4 and 5 should both start operating. According to the schedule, they will be joined by Reactor Unit No. 2 toward mid-November, provided that the reconstruction and modernization program has been completed and the Committee for the Peaceful Uses of Atomic Energy grants permission. The position with the damaged 1,000-megawatt unit is the most doubtful, as it is not clear when the necessary equipment will be delivered.

Negotiations are already being held with the Russian contractors, but the possibility of importing the equipment from Ukraine or the Czech Republic is not being excluded.

At the Kozloduy Nuclear Power Plant everything is calm now, and work is forging ahead on all the installations with the aim of saving us from having to keep watch by candle light during gloomy power cuts like those we have suffered in previous winters.

#### President Zhelev Addresses International Eco-Forum

*AU1510142092 Sofia BTA in English 1252 GMT 15 Oct 92*

[Text] Sofia, October 15 (BTA)—An international Eco-forum on "The Environmental Crisis in Central and

Eastern Europe and CIS [Commonwealth of Independent States]" started here today. It is attended by experts who shape the environmental policy of over twenty countries. The forum is organized by the Washington Center for Democracy and sponsored by the Howard Gillman Foundation. Addressing the participants, Bulgarian President Dr. Zhelyu Zhelev stressed that the forum focuses on a issue of great importance to the nations of the former Eastern bloc, the working out of a joint approach towards improving the environment in Eastern Europe. Dr. Zhelev expressed hope that the initiatives and projects made in Sofia will be approved at the conference of environment ministers in Florida due to be held in early 1993.

The forum will single out the region's key environmental problems and map out the strategy for their solution and the spheres of cooperation among the countries.

#### Power Engineering Symposium Proposes New Energy Policy

*AU1510201392 Sofia BTA in English 1939 GMT 15 Oct 92*

[Text] Sofia, October 15 (BTA)—The adoption of a final document marked the end of the international symposium on "Democratic Society, Protecting Environment Through Efficient Power Engineering" today. According to the symposium's organizers, the Cousteau team and the ecoenergetica society, the per capita oil consumption in Bulgaria exceeds by far that of the developed West

European states. The industrial sector uses 60 percent of the energy generated in Bulgaria as against 27 percent in the West European states.

The consumption of energy for household purposes is also considerably high while, in the mean time, the population suffers from shortage of energy. All these factors lead to unreasonably high financial expenses and import of expensive energy sources, experts conclude. Environmental pollution is yet another adverse consequence.

The symposium suggested a new energy policy based on energy efficiency. The experts suggested that an appropriate institution be set up to ensure its realization and application into practice. This necessitates the joint efforts of the government, the financial institutions and society at large.

The new energy policy adopted by the government and the establishment of a national power engineering efficiency agency provide a firm guarantee of its support.

## CZECHOSLOVAKIA

### Slovak Environment Minister on Danube Damming Postponement

LD2210042892 Bratislava Rozhlasova Stanica  
Slovensko Network in Slovak 1730 GMT 20 Oct 92

[Interview with Slovak Environment Minister Jozef Zlocha on the Slovak Government decision to postpone the damming of the Danube, by Magda Pospisilova on 20 October; place not given—live or recorded]

[Excerpts] [Pospisilova] Minister, what was behind the Slovak Government's decision not to go ahead today with the damming of the Danube for technical reasons?

[Zlocha] Look, it was not predetermined that the whole thing was going to start precisely today. The whole damming process was set by a timetable and, of course, depended on the situation on the Danube; the damming can only be done when the water level is low. [passage omitted] Since there seems to be a possibility of negotiations under the auspices of the European Community, we examined the issue in detail. Our stance is that we are willing to negotiate, be it in bilateral talks with the Hungarian Republic or in the framework of trilateral talks in Brussels or at some other agreed-upon place.

[Pospisilova] Does this mean that these are the technical reasons stated in the government's communique?

[Zlocha] These can certainly be considered as technical reasons.

[Pospisilova] The communique further states that the damming of the Danube should be done by 7 November this year. Does this mean that the Slovak side, or the Czechoslovak side, did not accept the proposal made by Mr. Horn, chairman of the Hungarian parliament's foreign committee, who yesterday said on Hungarian radio that they had asked the Slovak side to postpone the planned steps by one year?

[Zlocha] I am not aware that the government or a government delegation officially received such a proposal from the Hungarian side. Mr. Baco, who heads the government delegation, did not mention this at all today. This is a very difficult decision. The conditions for the damming are favorable. We are now supposed to carry out the government's decision, made a long time ago, to complete the Gabčíkovo hydroelectric project. We must exploit the favorable conditions. Now that the damming has been postponed, I suppose that we will use the time we have gained to consider all possibilities of reaching an agreement with our contractual partner, the Hungarian Republic. But we cannot afford not to complete this hydroelectric project because high waters could cause immense damage to Slovakia. The transport in the bed of the Danube is already difficult at the present time. If we do not dam the Danube, the water can flood our building site, it can damage the buildings that have already been completed. We must weigh carefully who is in the right, we or the Hungarian Republic. It is very surprising that they have abandoned their initial demagoguery; they did not even try to prove various arguments but but wanted us to prove that it will have no influence. We tried to do that and have compiled quite a lot of material and have completed much research that proves that it is possible to minimise the damage. So we, the Slovak Government, will most probably have to take this step if we do not want to cause much greater material and ecological damage.

[Pospisilova] Minister, you said yesterday to the Czechoslovak news agency, after the talks with EC officials in Brussels, that the Czechoslovak side was willing to negotiate on the latest Hungarian proposal, according to which the facilities in Gabčíkovo would only be used for transport. Could you be more specific?

[Zlocha] Well, this is a proposal by Mr. Madl, member of the Hungarian Government, which he put forward several days ago in Vienna. It is possible to agree with this proposal. It needs to be discussed, its pros and cons need to be examined, but it is acceptable.

[Pospisilova] Minister, a few days ago you said that the decision-making on whether to wait for a year or not will be very complicated. It seems to me from this interview that a postponement by one year is out of the question. Am I wrong?

[Zlocha] You are not wrong. It is not possible to talk about a postponement by one year. This was said at the government's session today. I have already said that immense material as well as immense ecological damage could be caused, and we do not want to allow this. Czechoslovakia has already suffered damage worth several billion korunas due to the postponement of the work and non-completion of the work by the Hungarian side. We really cannot afford, in the present economic situation, to suffer even more damage.

[Pospisilova] Do you think that 7 November 1992 will be the last day, or the day when the decision is made?

[Zlocha] I really cannot give you the exact date. We have to wait and see how things develop, whether there will be enough good will on the part of Hungary to negotiate. The EC officials have assured us that they will assume the patronage over these talks and will make every effort to ensure that powerful arguments will win, not demagoguery or some objections that have never been proven and cannot be proven. They want to contribute to the search for truth.

*[Pospisilova] And what is your personal impression from these talks? On which side, if we can call it this, is the European Community?*

[Zlocha] It can be said that the people we talked to are on the side of truth, that is on our side. Several of them who have already visited Gabčíkovo said that in their view the truth was on our side. But it also has to be said that they also warned us to use this opportunity to hold further talks and take this decisive step only when all other alternatives have failed.

#### **EC Expresses Desire To Help in Gabčíkovo Dispute**

*AU2110142392 Prague CSTK in English 0820 GMT  
20 Oct 92*

[Text] Brussels Oct 19 (CSTK)—The European Community (EC) does not want to act directly in the Czechoslovak-Hungarian dispute over the Gabčíkovo hydroelectric power project, but wants to help find a mutually acceptable solution.

This is what Slovak Environment Minister Jozef Zlocha drew from his talks with Karl van Miert, a member of the EC Commission, in Brussels on Monday [19 October].

Zlocha told CSTK that a meeting of a tripartite Czechoslovak-Hungarian-EC Commission on Gabčíkovo is being prepared to discuss as soon as possible the whole matter.

Gabčíkovo is part of a Czechoslovak-Hungarian hydroproject on the Danube which started to be built in 1978 under a 1977 agreement. In 1989 Hungary stopped work on its part at Nagymaros citing environmental reasons, and in May 1992 rescinded the agreement.

Czechoslovakia has continued building the Gabčíkovo project and today, it should start damming the Danube in order to put the hydroelectric power plant into operation.

As Czechoslovakia and Hungary have not succeeded in solving their dispute over the Gabčíkovo project, the EC has offered its good offices.

Asked whether Czechoslovakia is ready to postpone the final stage of the Gabčíkovo project construction, Zlocha told CSTK that to make a decision will be a very complex task.

When Czechoslovakia decided last year to complete the Gabčíkovo project, it also decided to take the risk of

damming the Danube. Suitable conditions for this are just now, at the end of October and beginning of November, he added.

In any case, Zlocha stressed, Czechoslovakia will do nothing that could cause the necessary amount of water not to flow through the Danube.

Zlocha said that Czechoslovakia is also ready to discuss Hungary's latest proposal that the Gabčíkovo structures be used only for transport.

#### **Britain Suggests Cautious Approach To Gabčíkovo Dam Dispute**

*AU2210159992 Prague CSTK in English 2058 GMT  
20 Oct 92*

[Text] London/Budapest/Bratislava (CSTK)—The British Foreign Office today confirmed to CSTK that it has suggested Czechoslovakia and Hungary approach the dispute over the Gabčíkovo dam with caution.

Ian Hughes of the Foreign Office Monday [19 October] invited ambassadors from both countries to discuss the controversy with him. He presented them with diplomatic notes for their governments from Great Britain, currently serving as president of the European Community (EC).

Karel Duda, Czechoslovakia's ambassador to London, told CSTK that the matter will be discussed Wednesday [21 October] at the EC Commission meeting in Brussels.

In Budapest today, Janos Herman of the Hungarian Foreign Ministry told a press conference that Hungary considered continued negotiations with Czechoslovakia the best way to settle the dispute.

Slovak Foreign Minister Milan Knazko told the Slovak News Agency TK SR in Bratislava that the Slovak Government is pushing for trilateral talks between Czechoslovak, Hungarian and EC officials to take place this week.

Noting that weather conditions were forcing work on the dam to hurry, he said it was only a question of several days before the Slovak Government gives the word for the Danube river to be dammed: If we want to prevent ecological catastrophe, if we don't want to lose further thousands of millions of crowns, we have to do it.

### **HUNGARY**

#### **Minister Interviewed on Bos Hydroelectric Project Controversy**

*AU1410111392 Budapest MAGYAR NEMZET  
in Hungarian 8 Oct 92 p 7*

[Interview with Ferenc Madl, minister without portfolio in charge of the Bos hydroelectric project, by Jozsef Botlik; place and date not given: "The Hungarian Government Cannot Legalize the Violation of Hungary's Territorial Integrity"]



[Excerpts] [passage omitted] [Botlik] *What solution do you envisage now, one month before the expected diverting of the Danube?*

[Madl] This can be interpreted both in narrow and broader terms. If I consider the narrow terms, the question is what possibilities the Hungarian side has? Our efforts are mainly directed toward halting the construction of the "C" version. This "C" version carries the same environmental dangers as the original contract: considerable damage to the supply of drinking water for millions of people, weaknesses in the dam system, and a possible large-scale earthquake that could lead to a rupture in the dam, something that could lead to a catastrophe in the neighboring communities. In addition, we must also consider the considerable damage to the ecology and ecological system of this whole area. The unilateral diversion of the flow of the Danube is the most serious factor in the "C" version, and this represents a violation of the Paris Peace Agreement of 1947 and of Hungary's territorial integrity, primarily because the Danube is an international border waterway and the main navigational flow forms the border between the two countries.

[Botlik] *Is this the center of the river flow?*

[Madl] No, not everywhere, because the border can also be further than the center of the river flow, depending on the morphological structure of the river bed. The main navigational flow where the water is deepest is the essential line. Both the international Danube Agreement and the agreement on border rivers clearly exclude any unilateral diversion of the Danube, and this is even forbidden on the very banks of the country in question. The "C" version violates all these international agreements. Therefore, Hungary's efforts are being primarily directed toward avoiding all this. A debate has been going on for two years: the construction should be halted for six months and every aspect should be investigated by international experts, including the question of environmental dangers, because this interstate agreement was signed 15 years ago, in 1977. Since then, a series of investigations and research has taken place on both sides, but the results have not been put together. One side considers one thing to be important, the other side considers another thing to be important.

Last year, the two sides agreed to create a tripartite body of scientists, with the participation of CSFR, Hungarian, and EEC experts. This would amalgamate the scientific results and would also carry out new tests, and both sides would respect its recommendations. Thus, we could emerge from this mess by declaring our good intentions. Unfortunately, this effort has not been successful so far, because we also asked the CSFR side to halt the unilateral construction of the "C" version during the investigation. This debate has been going on for fifteen years, and six months more would not be too long. However, the Hungarian Government cannot accept the diversion of the Danube as an unfriendly gesture, while being engaged in peaceful negotiations. All our negotiations have failed because the CSFR side did not accept the

offer to halt construction temporarily. The Hungarian Government cannot legalize the violation of Hungary's territorial integrity by agreeing to negotiate while the other side is diverting the Danube. This is unacceptable to the Hungarian Government, Parliament, and Hungarian public opinion. That is why we had to terminate the 1977 contract. Hungary's current major effort is to halt the construction for the period of investigation. By terminating the contract, a legal debate has emerged between Hungary and the CSFR, a debate in which the CSFR side claims that the contract is still valid and we did not have the right unilaterally to terminate it.

[Botlik] *Was the termination of this contract also supported by international law?*

[Madl] Of course. We proved that we terminated the contract in accordance with valid international norms, rather than illegally. The CSFR answered that the contract was still alive and they were building the "C" version as a temporary solution for the goals of the original contract. This means that the two countries also differ on the interpretation of the law. Therefore, the Hungarian prime minister proposed to his Slovak counterpart and the CSFR Government to take the issue to the International Court in The Hague. [passage omitted]

[Botlik] *What chances do we have at the Council of Europe in Strasbourg?*

[Madl] Hungary will soon send a detailed report on the Bos issue to the Council of Europe, which, hopefully, will put this issue onto the agenda of one of its bodies. Naturally, the Council of Europe will not take a position in favor of one side or the other, because this is not a decision-making body. However, the fact that it discusses the issue carries political weight and has had broad international reaction. This is why we will also turn to the CSCE. [passage omitted]

[Botlik] *Both the press and several government officials have recently come up with the possibility of a compromise on the construction of the "C" version. What is your opinion about this?*

[Madl] One should not criticize anyone for trying to find a solution to this danger. According to the so-called non-power-plant compromise, the Danube would continue to flow in its own bed and its banks would be increased in order to allow the water to flow into the headwater canal, and the Old Danube would also contain enough water. This "project" would only serve river navigation; however, no one has ever described this possibility with any technical certainty, and the CSFR side has always been sticking to building a power plant. A hydroelectric power plant, however, cannot work without a water reservoir and, therefore, it is hard to find a compromise. [passage omitted]

**Official Says Cold War With Slovakia Possible Over Danube***AU1410152392 Budapest NEPSZAVA in Hungarian  
10 Oct 92 pp 1,3*

[Report by Csoknyai, Varju, and Decsi: "Cold War Because of Bos?—Hungary Filed a Protest With the Danube Committee"]

[Excerpts] After the Slovak side announced that they were ready to divert the Danube within two weeks and put the Bos power station into operation according to the "C" version, the Hungarian Government filed a protest with the Danube Committee. It proposed at the same time that the committee request information from the other side on the technical features of the construction that closes off the Danube, the new shipping rules, and how the temporary closure of the Danube should be understood. [passage omitted]

If the Danube will be diverted to Czechoslovak territory at Bos in spite of our protests, then it is possible for a cold war situation to arise between the two countries, Hungarian Democratic Forum Deputy Peter Szel, member of the Parliamentary Foreign Affairs Committee, told NEPSZAVA. According to Szel, who was a member of a negotiating delegation in Bratislava at the beginning of the week, European borders are crumbling regardless of the Czechoslovak decision, and therefore it would be possible even in Budapest to raise the issue of a just rearrangement of the region's borders based on the will of the majority.

Answering NEPSZAVA's question, Szel said that no government can afford to disregard international peace treaties without consequences. At the CSFR-Hungarian border, the Danube's main line of current was marked out as the line of the border. "Therefore, the moving of the border can be seen as a serious act of aggression from the point of view of the neighboring country's sovereignty," concluded Szel. "Since this is going to be a one-sided measure, it logically follows that, in spite of all our goodwill, the possibility is near that an extremely tense, antagonistic, and cold war-like situation will emerge between Hungary and the CSFR."

This must be understood as a general freezing of economic, political, and touristic relations which, unfortunately, will or may also affect the 600,000 Hungarians in Slovakia. Therefore, Hungary's Foreign Affairs Ministry of the day has a great responsibility to maintain relations at an adequate level with the Hungarian national minority, in spite of the crisis situation. At the same time, Szel pointed out that the Hungarian Government also had obligations toward its own citizens, and, therefore, it certainly cannot ignore the forceful changing of the country's border. "I believe that the Slovak side has not even assessed the consequences of its plans, because, for the time being, it is living under the economic and military protection of the federal state," Szel argued. "What will happen after gaining its full independence is a different matter. I am already now certain that the

Slovak economy is on the brink of collapse, and is much more dependent on Hungary than vice versa."

In answering our question, Szel also dealt with the circumstances of the expected unilateral changing of the border. He said in connection with this that the borders of today's Europe were created by the "country producing" activities of the great powers, and it is no accident that the borders are crumbling. In fact, a number of artificially created countries, such as Yugoslavia and the CSFR, do not exist anymore.

"The possibility of a peaceful change of borders was not excluded even in Helsinki. This may permit that we ourselves can possibly support a just rearrangement of borders based on the will of the majority," Szel said. According to him, the fact that the Hungarians in Slovakia are probing the question of autonomy is already evoking angry protests from the Slovak leadership, and this is the precise reason why the new Slovak enemy image is being focused on the Hungarian nationality and the neighboring Hungarian Republic as its internal and external enemy. "From this point of view, the foreign affairs committee's discussions in Pozsony [Bratislava] were very interesting. Our partners said that 1.2 million citizens were living in Southern Slovakia and these constituted the state, plus 560,000 people. The latter would be the Hungarians! In other words, they do not consider the Hungarians who live there to be equal, to such an extent that they make an obvious distinction even at a high-level discussion." [passage omitted]

**Otto Habsburg on Hungarian EC Membership, Bos Debate***AU1310123292 Budapest MAGYAR HIRLAP  
in Hungarian 12 Oct 92 p 9*

[Interview with Otto Habsburg, chairman of the pan-European Union, member of the European Parliament, and chairman of the European Parliament's committee in charge of Hungarian affairs, by an unidentified correspondent; at the MAGYAR HIRLAP headquarters in Budapest, date not given: "EC Membership Is a Matter of Political Decision"]

[Excerpts] [Passage omitted] [MAGYAR HIRLAP] *How do you evaluate Hungary's international conditions?*

[Habsburg] I think we have not yet reached the end of the political crisis in the area. We see what is happening in the former Yugoslavia, and we see what will happen in the former Soviet Union. I recently visited Lithuania and Latvia and one can already see what will happen there. It has become increasingly obvious that cooperation has emerged between the former nomenclature and the army against Yeltsin, although not a conspiracy, because this cooperation is too open for that. The army no longer obeys the government, and this could lead to big problems, because, from our viewpoint, Ukrainian-Russian relations are the most dangerous point. This can affect us because we have a common border with Ukraine. I think that we should also consider security

matters regarding Hungary. Thus, the quicker we succeed in bringing Hungary into the EC, the greater Hungary's security will become. I know that the difficulties are great. We have just had some difficulties in talks with the Visegrad Three. However, I do not take these difficulties too seriously, but we must take them into consideration, and this requires cooperation not only with the government, but also with all the relevant forces in Hungary. Therefore, as chairman of the European Parliament's delegation in charge of Hungarian affairs, I would like to make contact with as many officials as possible. This would be my task. [passage omitted]

*[MAGYAR HIRLAP] What is your opinion about the domestic political situation in Hungary?*

[Habsburg] I also see the domestic policy situation in Hungary in a foreign political perspective because, in my view, this should be the major perspective of our national policy. First of all, I would like to mention the fact that, some two years ago, during their trips abroad, some Hungarian politicians began criticizing both the Hungarian Government and all the Hungarian authorities. This is no longer the case. I think that, precisely in difficult negotiations, we must behave in the way the British do. In domestic policy debates, the British also insult each other terribly, but they defend their country and their government when they are abroad, because this is Britain's legal government. Thank God our politicians have also learned this now. [passage omitted]

*[MAGYAR HIRLAP] In view of your optimism regarding Hungary's chances of joining the EC, it is not clear how the admission criteria can turn from the economic into the political, particularly if the Maastricht stipulations are fulfilled. In that case, the EC will become an even more economically integrated community, with even more strict economic requirements.*

[Habsburg] First of all, I would like to point out that, although economic criteria exist on paper, they do not exist in fact. Two countries that did not fulfill the economic criteria have joined the EC in recent years: Greece and Portugal. This affected the two countries differently. There is a huge economic boom in Portugal today. The government is clever and is making good use of the opportunities; thus, in a relatively short time, Portugal has reached a level that enables it to be regarded as a full EC member. Precisely the opposite has occurred in Greece: Inflation is high, and the only thing worse than the economic situation is the political one there. They really joined the EC without fulfilling the admission requirements, and they still do not fulfill those requirements.

The Hungarian economic position is much stronger than those of her neighboring countries, first of all because we are continuing to service our debts. This has a tremendous psychological effect. Hungary has a good reputation and one can see this from the fact that 60 percent of foreign investment in Central Europe comes to Hungary.

I think that, although the economic conditions are difficult and we do not fully fulfill the admission requirements, our way is better in this respect. If the political forces in the EC understand the situation and if these forces gain ground, Hungarian admission can go through. That is why I am optimistic. Hungary could be a case like Portugal. [passage omitted]

*[MAGYAR HIRLAP] From the outside, what is felt about the Bos debate? What advice would you give the Hungarian Government?*

[Habsburg] It should stick to its policy, because world public opinion, at least among those who understand the issue, is on Hungary's side. The European Parliament accepted a decision against the Nagymaros plan six or seven years ago. The implementation of the Hungarian Government's proposal to let a mixed committee led by the EC decide on the question would be the best solution. Meciar has turned down this proposal, but he is so flexible that everything is possible if he thinks it serves his interests. Therefore, we should continue to protest against the project.

*[MAGYAR HIRLAP] What international reaction do you envisage if the Slovaks build the "C" version?*

[Habsburg] I envisage a very negative reaction, because this would contravene international law. I am sure that there will be such declarations, and I think that this will make the Slovak economic situation very difficult. [passage omitted]

*[MAGYAR HIRLAP] The idea already emerged two or three years ago, but we ask you again now: Is it possible for you to play a special role in Hungary's domestic policy? Do you aspire to such a role?*

[Habsburg] I do not exclude any possibility. I know that one should not say no in politics, except on matters of principle. I told you then, and I repeat it today, that I have been in the European Parliament for 13 years, and I have worked for this. My main goal is to allow the countries that were under communist rule to join the EC as democratic and free states. In the course of this activity, I have made contacts with almost everyone. I have built a Hungarian bridgehead in the European Parliament and I think I can serve our nation better in this body. I do not exclude any possibility in the future. Perhaps in the Hungarian Parliament, why not?... However, I am very old. I will be 80 years old this year.

### **Foreign Minister Jeszenszky on Slovak Plans To Divert Danube**

*LD1510190292 Budapest MTI in English 1522 GMT  
15 Oct 92*

[Text] London, October 15 (MTI)—On the BBC's Hungarian programme on Wednesday, Hungary's Foreign Minister Geza Jeszenszky said Hungary still hoped that the Slovaks would abandon plans to start diverting the Danube next week—a move rightly said by many to be an act of ecological aggression.

"This is not simply a legal dispute, and by no means a Slovak- Hungarian dispute. I maintain that Hungary represents the interests of peoples everywhere when speaking out against the power plant," Jeszenszky said.

"The Hungarian Government has not yet given up hopes about the affair turning out favourably, but should the Slovak leadership decide to act unilaterally, it will use every possible international forum to call attention to the ensuing hazards and potential consequences," the foreign minister said on the BBC.

## POLAND

### Cancer Rates for Highly Polluted Regions Noted

92WN0771A Warsaw ZYCIE GOSPODARCZE  
(ENVIRONMENT AND LIFE supplement) in Polish  
No 22, 30 Aug 92 p III

[Article by Jolanta Matiakowska: "Death Maps: Laboratory Above the Smokestacks"]

[Excerpt] Cancer morbidity is increasing at a shocking rate in Katowice Voivodship. More than 7,500 people die of cancer each year, and about 8,500 new cases are recorded in the same period. Epidemiological data show that cancer will attack about 30 percent more people during the next 10 to 15 years than in the past, for people living in Silesia, that is.

So much for statistics and forecasts, which are heartless and anonymous. They say little about the causes underlying this very disturbing phenomenon. Specialists from Gliwice's Regional Center of Oncology are in a position to interpret much of the statistical data because they know how to use it. When and if the GOP [Upper Silesia Industrial District] ceases to be one of the most acute cancer centers does not depend on them, however.

The multiple-trial research that Professor Mieczyslaw Chorazy and his group have been carrying out on the biology of tumors leaves no doubt. The devastatingly damaged environment in Upper Silesia is having an adverse effect on human health. The air in Silesia (to say nothing of the other components of the environment) contains tremendous amounts of chemical substances that would never appear under natural conditions. The concentrations of suspended particles, free-falling particles, sulfur dioxide, nitrogen oxide compounds, fluorine, formaldehyde, phenol, ammonia, lead, cadmium, and benzopyrene are many times greater than the levels allowed by international standards. Permissible daily and annual concentrations are consistently exceeded. Besides these compounds, however, there are, after all, also several hundred types of aromatic ring hydrocarbons in the air of Silesia. Carcinogenic and mutagenic compounds have been identified among them. The Silesian population has 22 of Poland's 28 most frequent illnesses. Forty-five percent of all pregnant women here have problem pregnancies. The country's highest infant mortality rate per 1,000 births occurs in the cities and towns of the GOP. The increase in malignant tumor morbidity among men in Katowice Voivodship ranks

among the highest in the world. At the same time, the threat of lung cancer is rising among women. These and the other miscellaneous data showing the level of the Upper Silesian population's health in relation to environmental pollution still provide the basis for only a partial reading concerning the impact, but in the case of tumor epidemiology, the data are sufficiently disturbing to cause real alarm!

The world medical community has been pointing out for a long time the genetic code risks to workers employed in harmful industries (coking plants, steel mills, chemical plants, and so on). Scientists from the Gliwice oncological institute discovered dangerous genetic damage to chromosomes not only in the Silesian coking plant workers they examined, but also in others, in the 150 people selected at random in Zabrze and Gliwice who were not engaged in harmful industry but lived in the areas where such industry had the greatest impact.

Professor M. Chorazy says: "In some of them we discovered damage to the genetic material of the chromosomes. Changes in life cells caused by toxic chemical compounds surrounding us are identical to changes typical for the initial stage of cancer. Therefore, there is a grave danger of degrading the biological level of the present population and its offspring."

Are we dealing with a ticking genetic bomb? Is it counting down the seconds even now?

Cancer can develop in hidden form for many years, deceptively. Their present levels have inclined oncologists to examine reports and data showing environmental pollution in Katowice Voivodship going back several years, even well over a decade.

A high point was reached in the 1970's, especially in terms of air pollution. The past and current ecological situation, and the still growing threat of cancer, made Silesia and its residents a living research laboratory. Specialists from the most famous cancer research centers in the United States, Europe, and Scandinavia are interested in Silesia. They have sometimes supported and participated in Gliwice research. This June they came quite willingly to the Oncological Institute for an symposium entitled "Assessing the Cancer Risk in Upper Silesia."

The report compiled afterwards confirmed the influence environmental pollution has on adverse changes in human cells. Air pollution was shown to be a factor in lung cancer morbidity. It is essential that epidemiological research take into account other carcinogenic factors, such as smoking, interior household air pollution, alcohol consumption, eating habits, and the cancer history of members of the immediate family.

These issues are not new to specialists of the Gliwice Oncological Institute's Independent Cancer Epidemiology Laboratory, which Dr. Brunon Zemla directs. As the only such laboratory in the country and one of only a handful throughout the world, this laboratory conducts research still mindful of other indexes important to the



epidemiology of this disease in Upper Silesia. For example, it differentiates cancer risk among people who have lived in Katowice Voivodship since birth from those who have migrated there.

As is true in the case of natives of the region, it turns out that the longer one is exposed to toxic factors, the greater the risk of contracting this type of disease. People migrating to the area, 90 percent of whom come from a rural environment outside of Silesia, are not free of the risk either, if they live and work in the areas where the industrial emissions and municipal pollution are greatest, but researchers still did not note for their group as great an increase in lung cancer morbidity as for native Silesians.

Epidemiological research must continue. Gliwice epidemiologists and scientists have raised many questions. One is why the number of certain types of cancers is increasing while the number of other types is decreasing? Do the elevated radiation levels in the ever-deeper mines have an impact on the particular types of cancer that are characteristic of miners? What is the best way to prevent an invasion of tumors?

The mere recording of oncological morbidity and mortality is not adequate to combat cancer effectively. The statistics merely portray the drama of the situation and the extent of the risk.

The Katowice Voivodship maps showing residents' mortality indexes portrays the situation and risk in the most illustrative way. The mortality maps are frightening. Researchers at the Independent Cancer Epidemiology Laboratory drafted the maps using the International Disease Classification. They show the places where the highest cancer morbidity overlaps the most polluted places in Upper Silesia, along with the location of the worst industrial polluters and densest population. The maps show that the incidence of cancer is not the same throughout Katowice Voivodship.

The maps show clearly that men residing in Chorzow, Chranow, Czeladz, Laziska Gorne, Orzesze, Ruda Slaska, Swietochlowice, Trzebinia, and Wolbrom face the greatest risk of cancer, as do those in gminas like Kuznia Raciborska, Lubomia, Pawlowice, and Toszek.

Women residing in Bukowno, Bytom, Chorzow, Czeladz, Katowice, Kuznia Raciborska, Leszczyny, Laziska Gorne, Piekary Slaskie, Siemianowice, Swietochlowice, Trzebinia, and Zory and the parish of

Krzanowice are most likely to die of cancer. Men usually die from lung cancer, women from breast cancer.

As in any other population, the incidence of cancer among Upper Silesian residents is closely related to age. In 45 cities and towns in Upper Silesia, men die more frequently than women, especially men above 40 years of age. On the other hand, the largest number of deaths among women is noted in the group ranging from 20 to 40 years of age, and the chief cause here is cancer of the reproductive organs. As indicated on the map, the high and very highest cancer mortality among men, which for men reaches nearly 300 cases per 100,000 people in Kuznia Raciborska, covers 64 percent of the towns of the GOP. Eighty-four percent of the cities and towns in the Upper Silesian complex have percentages reflecting very high or the very highest mortality for women. This puts Katowice Voivodship right at the forefront of nations, between second and fifth place for men, and between second and fourth place for women. Silesia cannot stand up to a comparison with a similar region, like the Saar Basin, for example, where the mortality from such diseases is far lower, nor with another similar region like the Latino industrial-agricultural district in Italy, where the situation is still better. Only the indexes for northern Czech region or the southern Moravian regions can compare with the Silesian regions.

The system cannot be changed right away, but it must not be made worse for lack of money needed to examine and treat patients. General prophylaxis would permit early detection of the disease at stages when it is curable. Nonetheless, because of lack of funding, the Cancer Biology Laboratory of the Oncological Institute in Gliwice has been forced to end cancer research it had begun on children from the GOP towns at greatest risk, although the initial results showed changes in the genetic code of some young patients. The real cancer explosion and the cramped quarters at the Gliwice Oncological Institute today will extend the time patients must wait to receive rapid, accurate diagnosis and to begin effective treatment. In this way, each year nearly 2,000 people assigned by region to the Gliwice Oncological Institute will lose their chance for a normal life.

The new beds at the Oncological Institute, although essential today, will not arrest the expansion of cancer. Knowledge about it is still more important, along with a proactive attitude on the part of people threatened with it, who still react to information about it with...fear. [passage omitted]

## REGIONAL AFFAIRS

**Caribbean Regional Tourism Groups Protest Plutonium Shipment***FL1510012492 Bridgetown CANA in English  
1954 GMT 14 Oct 92*

[Text] Bridgetown, Barbados, Oct 14 (CANA)—The Caribbean's major government and private sector tourism groupings have added their voice to those calling for the barring of a deadly shipment of plutonium through the region.

The Caribbean Tourism Organisation [CTO] and the Caribbean Hotel Association [CHA] in a statement Wednesday said they viewed "with concern the news that a shipment of plutonium en route to Japan from France will traverse the Caribbean Sea and that this region may become a likely route for shipments of plutonium from Europe to Japan."

"Recognising the irreversible damage that can be done to the Caribbean environment in the event of any danger to the shipment, the CTO and CHA are hoping that all reasonable thinking and friendly nations within the passage of the shipment would take all steps necessary to prevent the shipment from passing through this hemisphere," they said.

They added that Caribbean tourism is a totally environmentally dependent industry and plutonium is one of the most toxic and dangerous substances.

"CTO and CHA call on regional and international governmental and non-governmental organisations to support the efforts of the Caribbean Conservation Association and other agencies in mobilising the energies of the total Caribbean and its friends and allies, to take the measures necessary to persuade those responsible for the shipping of the plutonium through the Caribbean Sea to desist from so doing."

The plutonium shipment is expected to enter the Caribbean near monthend if the route through the Panama Canal is chosen. South American, African and Asian countries have stated they do not want the substance shipped through their waters.

**Caricom Secretariat Seeks Data on Plutonium Threat***FL2110181292 Bridgetown CANA in English  
1741 GMT 21 Oct 92*

[Text] Port of Spain, Trinidad, Oct 21 (CANA)—the Guyana-based Caribbean Community (Caricom) secretariat is seeking information from international agencies on the threat the Caribbean is likely to face from a shipment of plutonium reportedly planned for later this month.

Caricom's secretary-general, Edwin Carrington, said the enquiries to the International Atomic Energy Agency, the International Maritime Organisation, and the United Nations Environment Programme follow concerns expressed by regional foreign ministers this month

in New York. Environmentalists say the Akatuski Maru, a Japanese ship, will be transporting more than a tonne of the highly radioactive plutonium from France through the Caribbean to Japan.

"We have, on the instructions of the ministers, had to make contact ... To establish the nature of the danger we face, to seek the kind of assurances about the conditions (under) which this kind of product is transhipped, and to guarantee ourselves that the region does not stand in any great danger should an accident or mishap occur while such product is shipped through the region's seas," Carrington told reporters in Port of Spain.

"The ministers were concerned not to strike an alarmist call but to operate on a basis of sound, objective technical assessment, and this is what we're trying to establish at the moment." Carrington said the secretariat had learnt that the plutonium was being shipped "over a period of time." This, he said, "increases the danger."

Byron Blake, the director of trade and industry at the secretariat, said the Caribbean had to be made aware of the shipments.

"In fact in 1991, there were some 13 of these shipments," he said, adding that in most cases the region was not informed about the nature of the cargo. "But while those materials might not be as dangerous ... Or expansive in their nature as the plutonium, there is a real threat in terms of materials across the Caribbean Sea." He said in 1990, regional environmental ministers had sought to get information about proposed shipments of dangerous material through the Caribbean.

"Now, because of the nature of this particular case, it is even worse because it is shrouded in secrecy. As of now, we don't know whether it will be across the Caribbean, whether it would go down the African coast, when it will be, so it is even worse, because of the nature of secrecy covering the shipment," Blake remarked.

Trinidad and Tobago's main opposition party, which is strongly opposing the shipment of the plutonium, has called on regional governments to take appropriate action to protect their citizens and the environment. The United National Congress (C) said it was concerned about the "almost frightening and weak response by the governments" in the event of an accident at sea. The party said the material which was used for making nuclear weapons represented one of the most toxic substances known to mankind. The C said it was estimated that a single microgram can cause cancer and the proposed shipment through the region's water poses a dangerous threat to public health, safety, and the environment. Many nations, the party said in a statement, had banned the shipment—which contained enough plutonium to build at least 30 nuclear bombs or 120 crude nuclear devices—from passing through their waters.

"In seeking to develop the region as a zone of environmental protection, it is absolutely vital that the Caribbean countries and governments speak out against this

outrage and take collective action against the Japanese Government over the transportation of the shipment," the opposition party said.

## ARGENTINA

### Ozone Hole Affecting Tierra del Fuego Province

PY1210145792 Buenos Aires NOTICIAS

ARGENTINAS in Spanish 1404 GMT 10 Oct 92

[Text] Buenos Aires, 10 Oct (NA)—The National Meteorological Service has reported officially that the ozone hole has moved to the south of the American continent for the first time in the past 12 years, affecting populated regions in Tierra del Fuego Province.

According to measurements made at the Vice Commodore Marambio and General Belgrano bases in the Antarctic, the ozone hole has begun "to expand slightly toward the north" and is now moving from the Antarctic cap toward the south of the continent.

The Meteorological Service also reported that the "1992 episode," that is, the increasing thinning of the ozone layer so far this year, expanded "the ozone hole to an area between 17 to 23 million square kms."

Bulletin No. 6/92, released yesterday by the Meteorological Service, states that the expansion of this "episode" has reached "for the first time in 12 years populated zones in Argentina's southern mainland."

Mayor Carlos Romero, head of the Vice Commodore Marambio Air Force Base, today admitted that "the critical stage will last until November." He noted, however, that "this situation has persisted for many years and should not cause alarm."

Romero said: "A thinning of the ozone layer is being observed, but it should not cause alarm." He noted that "the residents of Antarctica are those most affected" and said they have to wear special clothes and sunglasses "covering the eyes" to completely protect themselves against the effects of the phenomenon.

The bulletin states that equipment at the Marambio and Belgrano bases detected "values of 130 Dobson units (UD), confirming the presence of the ozone hole on that vertical" in the Antarctic region.

The bulletin says that "the ovoid-shaped hole has begun to enlarge slightly toward the north, with projected total ozone values of around 175 UD's south of Tierra del Fuego Province, which represents a 50 percent reduction with respect to the values previous to the current ozone episode."

The Meteorological Service has reported that "oscillating movements, which hint at a quick restoration of normal values and a short period of critical values on Tierra del Fuego" are expected to occur within the next few days.

The bulletin also states that the 1992 episode of the ozone hole "continues to manifest unusual conditions

with respect to previous years, both in terms of the measured minimum values and in its area of influence."

The Meteorological Service reported that "the 200 UD values currently observed between 55 and 60 degrees south latitude are completely unusual as compared with previous episodes."

Meteorological Services spokesmen told NA that the expansion of the ozone layer at this time "is normal." They admitted, however, that the values registered in the latest measurements "are completely different from those observed during the past few years."

## BRAZIL

### President Decides To Create Environment Ministry

PY1510003092 Rio de Janeiro O GLOBO in Portuguese 14 Oct 92 p 14

[Excerpt] Brasilia—President Itamar Franco has decided to create the Environment Ministry as a way of showing the importance his administration will give to ecological matters. The other reason for the decision was the size of the structure in charge of environmental affairs, which already functions as the Environment Special Secretariat. During suspended President Fernando Collor's administration, this secretariat was directly linked to the Presidency of the Republic.

Upon his arrival at Planalto Palace this morning, President Franco said: The environment minister will be an Amazonas State congressman.

Franco explained that currently the performance of the various organizations in charge of environmental policies has been marked with conflicts because each one of them is devoted to an activity and there is no general coordination. The creation of the Environment Ministry will not require building offices or increasing the number of personnel available, Franco added.

The president of the Republic said: The Ibama [Brazilian Institute for Environmental Affairs and Renewable Natural Resources] is so huge that the number of its DAS (Higher Directorate and Advisory Group) employees is higher than that of the Mines and Energy Ministry (MME). [passage omitted]

## CHILE

### Ultraviolet Radiation Index Increases More Than 200 Percent

PY1610201092 Santiago EL MERCURIO in Spanish 13 Oct 92 pp C1, C4

[Article by Pilar Espinosa Ribas]

[Excerpt] Punta Arenas—Magallanes University [Umag] professor Felix Zamorano reported that the ultraviolet radiation index increased more than 200 percent in October, compared with measurements made in August.

He made this statement in releasing background information on the thickness of the ozone layer over Punta Arenas and ultraviolet radiation levels.

The Umag study group headed by physicist Victor Valderrama and comprised of professors Claudio Casiccia and Felix Zamorano began these measurements in July with a Brewer ozonometer provided by agreement with the Brazilian National Institute of Space Research. [passage omitted]

## DOMINICAN REPUBLIC

### Japanese Offer Assurances on Plutonium Shipment

*FL2110170192 Santo Domingo Cadena de Noticias in Spanish 1000 GMT 21 Oct 92*

[Text] The Japanese Embassy in the Dominican Republic has assured the public that the shipment of plutonium on its way from France will not constitute a danger to the Dominican Republic in any way. The Japanese diplomatic mission's minister-counselor (Susumu Fakuda) maintained that his country's government has taken all precautions to avoid having the vessel that is to carry the radioactive material pass near other ships while on its way. Mr. (Fakuda) said the ship will pass 200 miles from the Mona Channel, and that they are therefore sure that it will not affect the Dominican Republic or any other country. (Fakuda) said the Japanese Government guarantees that the vessel carrying the radioactive material will not constitute any danger whatsoever for the Dominican Republic or for any other country in the hemisphere.

## GUATEMALA

### Changes in Forestry Law Proposed

*93WN0018A Guatemala City DIARIO DE CENTRO AMERICA in Spanish 3 Sep 92 p 2*

[Text] The country's forested area is being reduced by approximately 70,000 hectares each year, due to factors such as the advance of the farm belt, cultural factors and the population's scarce economic resources, that causes people to rely on the forest as their sole source of energy, according to the congressmen who are sponsoring the new Forestry Law.

The draft bill was presented to Congress on 2 September, with the signatures of deputies Arabella Castro Quiñonez de Comparini, Maria Eugenia Castillo, Leon Arturo Amiel Escobar, Eduardo Mendez Pinelo and Jose Estuardo Matute, who pointed out that their bill contains important innovations on subjects such as concessions, incentives, crime and authority.

With regard to concessions, the sponsors take into account that the present law contains contradictions, such as that which establishes that a concession may not run for more than 10 years, when the growing cycle for most of the woods on the market requires a minimum of 50 years. This gives rise to abusive use of the forest. Nor

have concessions been considered for unforested areas on government land, since the cost of land is one of the most important factors in a businessman becoming interested in reforestation.

We know that the state does not have, nor will it have, the capability of reforesting its lands with its own resources, and therefore it should consider the process of seeking to get the private sector interested in reforesting government lands as a productive measure, the bill's sponsors said.

When they speak of the private sector, they are not referring only to businessmen in the wood industry or those involved today in forestry, but they also seek to ease the pressures on land ownership. Therefore, the bill establishes procedures for the peasant sector to organize itself to participate in the benefits of the concessions, without granting guarantees for economic backing, but with the personal guarantee of any non-governmental environmental organization.

With regard to incentives, the sponsors sought a formula that would permit even the small peasant to benefit, and so the Forestry Tax Credit Voucher was created as a credit instrument payable to the bearer, to be freely circulated, that will be received by the Ministry of Finance in payment to be credited to any type of tax obligation.

The incentives are designed not only for planting but also for the maintenance of reforestation and of already established forests. This is a complete change to current ideas on forest incentives, which leave out anyone who is not an income tax payer or anyone engaged in the maintenance of established forests, and establishes forest maintenance as a priority interest of the state.

The sponsors believe that, within two years of the law's enactment, some 20,000 hectares each year will be reforested as a result of these incentives, which will mean less pressure on already established natural forests.

On the subject of crime, the sponsors believe that fraud and abuse of forest resources should be severely punished, and each offence has its own punishment. Current forestry offenses are revoked because they no longer reflect the intrinsic value that today's society places on forests.

As for authority, the bill eliminates the Directorate General of Forests as part of the Ministry of Agriculture, and creates the National Institute of Forests as an autonomous agency, with a board of directors which would include sectors active in forestry, with its own budget and the possibility of acquiring additional resources.

The bill establishes crimes against forest resources, with noncommutable prison sentences of two to five years and fines of 5,000 quetzales, and the crime of unauthorized forest clearing or fires, with noncommutable prison terms of two to six years and fines of 5,000 to 10,000 quetzales.



## REGIONAL AFFAIRS

### OAPEC Urges Delay in Ratifying Weather, Biological Protocols

92WN0752B Jeddah AL-MADINAH in Arabic  
17 Aug 92 p 17

[Article by 'Imad Al-Suwayfi]

[Text] In a declaration issued in Cairo, OAPEC [Organization of Arab Petroleum Exporting Countries] called on oil exporting countries to postpone signing or ratifying protocols related to weather and biological changes and work programs for the 21st century, until gaps are narrowed between environmental and developmental needs.

OAPEC indicated that costs of both developing stages and sectors of petroleum and petroleum products industries, and improving their functioning in order to preserve the environment, were not to be compared with the higher costs of replacing them with nuclear energy. OAPEC added that, therefore, it was that oil and gas would remain for a long period of time the most important sources of energy, as well as the most available, for peoples all over the world.

OAPEC made it clear that although oil-rich countries were newly industrialized, they were amongst the most concerned when it came to environmental protection. The oil countries also gave great consideration to environmental issues and safety standards in any developments they undertook in their oil industries. OAPEC indicated that there were successful examples in both city and new community planning, and in industries at Yanbu' and Al-Jubayl, where new measures for environmental protection had been implemented.

OAPEC ascertained that industrialized countries have gone a long way in the use of nuclear energy. These countries also reached a high standard of living and of affluence. Nevertheless, they are asking oil-producing countries to stop exporting pollution, and developing countries to stop destroying their forests. They also recommend that all countries use nuclear energy because it is safer, cheaper, and more available. Regarding nuclear energy, they are ignoring the Chernobyl incidence, and the Three Mile Island one before it.

OAPEC added that although industrialized countries have asked oil-producing and developing countries for environmental protection actions, the latter have failed to oblige the former to increase their economic aid, which does not exceed 0.7 percent of their national income until the end of the century.

### Gulf States Open Water Resources Conference in Dubayy

NC1110152092 Paris AFP in English 1502 GMT  
11 Oct 92

[Report by Nadim Qawash entitled "Gulf States Warn of Serious Water Problems"]

[Excerpts] Dubayy, United Arab Emirates, Oct 11 (AFP)—Gulf Arab states have opened their first conference on water with a warning that the region could face serious problems unless it cuts consumption and develops existing resources.

Participants in the conference which began Saturday agreed the oil-rich desert region faced a serious shortage in water, posing an obstacle to their attempts to boost the farming and industrial sectors to lessen reliance on oil.

"There is a real water problem in the region," warned 'Abd-al-Latif al-Muqrin, agriculture and water chief at the Riyadh-based secretariat of the Gulf Cooperation Council (GCC).

"It could get worse if we do not work to rationalise water consumption, which is among the highest in the world, and develop new methods to increase existing resources," he told AFP.

The GCC states of Bahrain, Kuwait, Oman, Qatar, Saudi Arabia and the United Arab Emirates (UAE) depend on desalination plants for more than 70 percent of their sweet water while the rest comes from shrinking underground reserves. [passage omitted]

The conference in Dubayy, a member of the UAE federation, coincides with Arab-Israeli peace negotiations, which also cover economic development and water resources.

"There is a feeling of anxiety on both the regional and world levels because of the large decline in water resources," UAE Water and Electricity Minister Humayyid Bin-Nasur al-'Uways told the participants.

"We should step up efforts to boost our water reserves through research and other scientific methods. If we succeeded, then this would largely serve development in the Gulf and enable us to exploit arable land."

But 'Uways sounded pessimistic about a solution to the water problem, predicting the shortage would be one of the main problems in the 21st century.

"Your conference should concentrate on the bitter reality awaiting the world in general and the Gulf in particular. The real value of its results should be in drawing up proposals to face water challenges in our area."

While most GCC members have set up expensive plants to recycle sewage water into agriculture, they still face difficulty in meeting the demand of the industrial sector given its rapid growth.

The industrial and population growth and the hot desert weather have made per capita consumption of water in the region among the highest in the world, standing at more than 100 gallons (380 litres) per day. [passage omitted]

**Kuwait Withdraws From Iraqi-Chaired Environmental Meeting***NC1510141792 Cairo MENA in English 1335 GMT 15 Oct 92*

[Text] Cairo, 15 Oct (MENA)—Kuwait today withdrew from the fourth session of the Arab environment ministerial meeting, which opened here today under Iraq's chairmanship.

Kuwaiti Health Under Secretary Dr. 'Ali Sayf, leading his country's delegation to the meeting, sent a memo to Arab League Secretary General Dr. 'Isamat 'Abd-al-Majid, saying: Iraq's chairmanship contradicts the council's main principles and environmental protection, because Baghdad caused environmental calamities.

Iraq has set over 370 oil fields on fire, threatening people and the environment, he said.

The Iraqi force planted millions of mines that claimed the lives of many and wounded others, Dr. Sayf added.

**Arab Ministerial Council Urges Caution on Earth Summit Decisions***NC1610093692 Cairo Arab Republic of Egypt Radio Network in Arabic 1500 GMT 15 Oct 92*

[Excerpts] The Arab Environment Ministerial Council ended its one-day fourth session at the Arab League Secretariat headquarters in Cairo today. Dr. 'Atif 'Ubayd, minister for cabinet affairs and minister of state for administrative development, led the Egyptian delegation to the meeting. [passage omitted]

The council called on Arab countries not to act hastily in ratifying the two main agreements of the Brazil Earth Summit on climatic change and biodiversity. The council adopted a two-year Arab environmental program to combat desertification and industrial pollution and encourage environmental education. It also decided to enhance cooperation with international and Arab environmental institutions. It will hold its next session in October 1993.

**PALESTINIAN AFFAIRS****Gaza Strip Water Statistics Detailed***92AE0646Z London AL-QUDS AL-'ARABI in Arabic 29 Aug 92 p 4*

[Article by 'Isam al-Shawa: "Occupation Authorities Have 20 Locations in Gaza Continuously Pumping Water to Israel"]

[Text] The area of the Gaza Strip is 360 square km. Its population is 750,000 people. It is located on the southeastern shore of the Mediterranean Sea, between 31.12 and 31.45 degrees north latitude and 34.20 and 34.25 degrees east longitude. The Gaza Strip is 1.33 percent of the total Palestinian territory. The winter season in the Gaza Strip officially begins in November and ends in March. The rains that fall there constitute the principal source of drinking water. It has an average temperature

of 21 degrees centigrade, with an average annual humidity of 65 percent, increasing to 62 percent [as published] in August and September. The Gaza Strip is comprised of:

- built-up areas—70,000 dunums
- Jewish settlements—38,000 dunums
- arable land—168,000 dunums
- sand dunes—89,000 dunums

In 1948, the population of the Gaza Strip was 50,000, while the area of land planted with vegetables and citrus trees totaled 10,000 dunums. The influx of refugees probably raised the population figure to close to 350,000, and the increase continued uninterrupted, until the present figure of 750,000 was reached. The amount of land planted with citrus trees increased from 10,000 to 75,000 dunums. Because water salinity has increased, the planted area has decreased. It is now no more than 40,000 dunums, with maximum production of 250,000 tons. This earns an annual income of \$2 million. This, of course, has contributed to the rapid consumption of the freshwater strata.

The Gaza Strip is situated on two strata of water. The upper stratum carries fresh water, while the lower carries brackish water. The water's salinity ranges from 250 ppm in the north, to 1500 ppm in the south. The rocky strata slopes downward from the east (30 meters below sea level) to the west (110 meters below sea level), to a depth of 400 meters below sea level. There are geological deposits containing large quantities of brackish water, which has a high percentage of salt, between 3,000 and 5,000 ppm.

Demographically, the Gaza Strip represents one of the most densely populated areas. If we exclude Jewish settlements, the population on 233 square km is 3,218 persons per square meter [as published]. In other words, one person has .310 square meters in which to live.

Annual consumption of water at the present time is 100 million cubic meters. The rocky strata occupies about 60 percent of the water, which leaves only 40 million cubic meters.

Perhaps the immoderate withdrawal of water is causing the freshwater layer to dry up. The alternative has been deeper drilling. In addition, rainwater puts pressure on the brackish water, preventing the seawater from passing through the brackish water. Its pollution makes it unfit for human consumption. In the upper rocky layer, there are some pockets of fresh water distributed around the Gaza Strip. From them, citizens obtain drinking water.

The chemical and bacteriological specifications of water in Gaza:

1. A sample of water, unfit for human consumption, which contains more than 40 ppm of chloride, was found in 34 percent of the water wells used by consumers in the city;

2. A sample of unfit water, containing more than 900 ppm of sulphur, was found in 10 percent of the city's wells;

3. A sample of unfit water, containing more than 1.7 ppm of fluoride, was found in 16 percent of the wells;

4. A sample of unfit water, containing more than 50 mg per liter of nitrate (10 mg per liter of nitrogen) was found in 77 percent of the wells;

5. A sample of unfit water, containing more than 100 mg per liter of nitrate was found in 44 percent of the wells;

6. A sample polluted with bacteria was found in 12 percent of the wells.

A study published by the Health Division of the Research Center in Gaza revealed that the level of fluoride in drinking water in the Gaza Strip ranges between .8 and 3.8 ppm cubic meters, while the usual permitted ratio in drinking water, according to recommendations of the World Health Organization, is .7 to 1.2 ppm cubic meters.

If matters remain like this and no attention is paid to the dangers that await the health of residents in general, and children in particular, then the sewers, in addition to the other dangers, will have an affect on the children. It should be noted that the number of handicapped children is more than 16,000. There are other factors that contribute to this situation, such as malnutrition, ignorance among illiterates, etc.

Up until 1967, the water situation was not a serious danger to the population. No indicators of poor quality or scarcity had appeared. In any event, the Israeli occupation authorities issued a series of military orders, putting restrictions on the testing of water and on earmarking or submitting it for study, which required the approval of the Gaza Strip's military governor general.

Furthermore, new orders imposed strict conditions on digging wells, an activity that was not permitted without official approval. This order also prohibited reclamation and restoration. In 1968, a military order was issued, numbered 291, declaring that all water sources were the property of the military government. This order was issued to conform to the Israeli Government's water laws promulgated in 1959.

Serious action began in 1977, when the loss of the rocky stratum of fresh water became clear. The military government issued an order that placed an embargo on irrigation operations. The harsh embargo measures included penalties such as prison and stiff fines.

There was little need to comply with the law, as long as the water allocated for irrigation did not exceed the need.

Potable water is the responsibility of the municipalities and UNRWA [UN Relief and Works Agency]. In the center of Gaza, Israelis are digging wells in the settlements close to Dayr al-Balah, where best water is found.

They are pumping water to "makrut" pipes, but they sell the water to residents in the central Gaza area through which the water pipes pass.

There are a number of wells in 20 locations, which—frighteningly—were dug along the green line that encloses the Gaza Strip. These locations constantly pump water into Israel.

Perhaps the Wadi Gaza, which floods during the rainy season and which starts in Mount Hebron in the east and ends at the coast, between Gaza and Khan Yunis, in the west, has been dammed up by Israel. Several dams have been built in order to prevent the flow of water to the Gaza Strip. This could have provided a valuable source of water because it can be used both for irrigation and human consumption.

There are no figures concerning the amount of water that is collected in this wadi, except that it certainly forms a considerable aid to irrigation operations in the central area of Gaza.

Local consumption in the Gaza Strip during 1991 is estimated at 40 million cubic meters. This does not include the Israeli settlements in the Gaza Strip. Water consumption is expected to reach 59 million cubic meters by 2010, when the population has reached 1.025 million. At the present time, local consumption per person per day is 107 liters. However, numbers for Jewish consumption in Israeli settlements are not available. Aside from increased use, the water shortfall is expected to increase, in accordance with need, to 70 million cubic meters in 2010, without taking into account the Israeli settlements, which consume considerably more water for irrigation than the Arabs. Their consumption is twice the consumption of Arab citizens.

All of this reflects the current directions and problems. As to possible solutions, the available options are not easy and will not be easy to achieve. Here are some suggestions, which have been the subject of study:

1. Reuse sewer water through treatment and purifying. The Gaza Strip produces 25 million cubic meters of effluent, from which no benefits are obtained. By this means, more irrigation water could be provided.

2. Build small dams in the wadis.

3. Implement projects to conserve water in several places. The American Refugee Assistance Association (ANIRA) in the Gaza Strip has carried out such projects. These have included collecting rainwater in conduits, which flow into a small artificial lake, to help in augmenting the rocky water strata. This project provides an estimated 1.5 million cubic meters of water for these strata.

4. Implement anti-"osmosis" operations, through which brackish water could be transformed into fresh water to be used for drinking.

5. Remove salt from seawater by desalinization. However, there is no doubt that this method is the costliest to use for the purpose of obtaining fresh water.

A UN expert has made a study of the water situation in the Gaza Strip. He estimated that the Gaza Strip could be in need of drinking water in three or four years. A preliminary study was conducted in 1990 to build a building equipped with the necessary equipment to extract salt from seawater, under UNDP [UN Development Program] supervision. The study proposed constructing a dual-purpose building to produce energy and desalinate seawater. It would be equipped with turbines to generate energy, with a production capability of 50 megawatts, which could be doubled in two later stages. The first stage is based on providing 18 million cubic meters of fresh water annually, with an investment capital of \$180 million. The estimated cost of construction would be \$1 per cubic meter of water. It was suggested that a second unit be built later, at the same cost and in the same location, so that the final total cost would be \$360 million. The two stages would produce 36 million cubic meters of water.

A. The cost would be very high;

B. A shortfall would still exist in fulfilling present requirements, with the population increase, which is expected to reach 1 million by 2000.

The IDA for Limited Technology proposed an alternative project in 1991. This dual-purpose proposal was composed of medium-speed diesel generators to supply 50 megawatts of electricity, which could be doubled with increased desalinization units to provide 18 cubic meters of fresh water per year. The cost per cubic meter of fresh water would be \$.48. A second unit could be built later, which would require the same capital, to produce 36 million cubic meters of fresh water annually, with an annual cost of \$315 million. The cost, therefore, per cubic meter of fresh water would be less than that in the UNDP proposal.

Because implementing such long-range projects would be costly, in addition to taking a long time for implementation, it would be desirable—economically—to avoid desalinizing seawater, as long as there are other sources at a better price.

With regard to the considerable shortage of water in the Gaza Strip and the dire need for water in future years for drinking and irrigation, a compromise must be found. For example, a short-term solution might be gained from removing salt from groundwater by antiosmosis technology. The Gaza Strip has plenty of brackish water, whose salinity ranges from between 500 to more than a milligram of chloride per liter.

Of course, this is not a final solution because it would undoubtedly lower the level of groundwater. However, it could be used safely until the considerable financing is available to implement seawater desalinization projects.

Perhaps the least costly solution, in my view, which would not be impossible but, perhaps, might be difficult to maintain, is to form a joint committee, which would include all conflicting parties, to assume responsibility

for water allotment. Such a committee must have the power to buy water from abroad, if the need arises.

Concerning the use of water in Middle East countries, Professor Tulas Naf said at a conference held on 26 June 1990 that "unless the intensity of the crisis is lessened, it will produce the possibility of an outbreak of war." He added: "In the final analysis, water will decide the future of the occupied territories and, consequently, the issue of conflict or peace."

In conclusion, Professor Naf said: "The Gaza Strip's rocky strata are continually deteriorating. There is, in fact, water encroaching from the Mediterranean. If the rocky water strata disappear, it will then seriously affect the rocky water strata near the coasts in the Israeli area because there is a strong possibility that there is a push and shove effect between the two areas. There is serious deterioration in the depletion of rocky water, to such an extent that it has reached the red line."

## ALGERIA

### Summer Forest, Brush Fire Damage Assessed

93AF0014Z Algiers EL WATAN in French 4 Sep 92  
p 12

[Article from ALGERIE PRESSE SERVICE: "Forest and Brush Fires: Criminal Hands"]

[Text] This summer in Algeria, 805 fires destroyed some 8,328 hectares, 4,403 of which were pure forests, 2,339 hectares of brush, 1,556 of scrub, and 30 hectares of alfa-grass, according to a provisional accounting drawn up last 30 August by the general directorate of forests and nature areas at the Agriculture Ministry.

The wilayas most affected are the Center and West wilayas, especially Tizi-Ouzou, which as of 30 August had recorded 95 fire areas that had destroyed 1,722 hectares of "forest growths" (pure forests, brush, and scrub); next are the wilayas of Oran (15 fires, 1,229 hectares destroyed), Bejaia (49 fires, 836 hectares), Tiaret (12 fires, 795 hectares destroyed), Constantine (7 fires, 581 hectares destroyed) and Chlef (36 fires, 453 hectares destroyed).

The Central and Western regions recorded a total of 519 fires with 7,651 hectares of burned forest growths, or 92 percent of the area overrun by fire, according to the same sources, which added that this was a provisional accounting and that the month of September could be dangerous, as it is each year, "because it is predicted to be a dry month and because at this time of the year there is cleaning to help young shoots," said Mr. Ghebalou, the director of forests.

During the same period in 1991, 916 fire areas had been reported, which destroyed some 8,161 hectares of forest growths (as compared with 805 areas and 8,328 hectares destroyed this year), whereas the annual reforestation rate is 25,000 hectares.

The forest fires began mainly in mid-July because of the late rains and "in almost all cases, the causes were



human ones, either through negligence or malice," Mr. Ghebalou stated. Some particularly bad fires broke out between 2000 and 0500 hours, i.e., when natural risks are zero, he added. In the case of Murdjadjo in Oran, "the investigation is under way but according to early evidence, an arsonist was responsible," Mr. Ghebalou said. Regarding the damage caused by this huge fire, Mr. Ghebalou estimated that the 2,000 hectares mentioned "is an exaggerated figure" and that the actual losses where forests are concerned are a lot less. According to him, losses in a forest of full-grown trees cannot be estimated visually when the fire has barely been brought under control.

The estimate of burned areas is made by photogrammetric methods after demarcating on a 1:2500 topographic map and, in the case of fires of less than 100 hectares, by means of a topographic survey conducted from land.

Furthermore, he added, there is a tendency to confuse damage to crops (hay stacks, fruit trees) and damage to forests, i.e., the pure forest and its ecosystem (brush, scrub, and alfa-grass).

As far as the investigatory process is concerned, Mr. Ghebalou stated, resources are "very thin" and the investigations, which have been carried out, are "difficult" because "you don't check a forest the way you control a governmental or any other type of infrastructure; the forest is exposed and subject to citizens' conscience," this official said.

## INDIA

### Environment Minister Agrees on Cooperation With Finland

93WN0027A New Delhi PATRIOT in English 2 Sep 92 p 5

[Unattributed report: "India, Finland Agree on Cooperation"]

[Text] India and Finland have agreed to cooperate in the field of wastelands development, fuel and fodder management, water conservation and seed technology, reports UNI.

According to official information received in the Capital on Tuesday, the agreement for cooperation in these areas was arrived at the talks between visiting Union Environment Minister Kamal Nath and the Finnish Forest Minister Martipura at Helsinki on Monday.

Mr Kamal Nath is on a three-day official visit to Finland. From Helsinki, Mr Kamal Nath will go to Sweden for a three-day visit and on his way back he will hold talks with British government authorities on environmental matters.

Joint training programmes are to be finalised in which the finished board of forestry, Helsinki University and the Indian Council of Forest Research and Education, Dehradun, will participate.

Others who participated in the talks were the director of Forestry Board of Finland, a senior scientific advisor, professor of the Helsinki University who is a specialist in siliculture, the director of International Environment and Forests Cooperation and the Finnish ambassador to India.

Another important area of cooperation identified was the technology transfer with regard to remote sensing. A new helicopter device for remote sensing acattrometer—may be acquired by India after it is produced in Finland on commercial basis. The device can be used to identify tree species and determine the height of the trees. These can also measure pollution in forest areas.

### Packaging To Be Rendered 'Eco-Friendly'

93WN0012A Bangalore DECCAN HERALD in English 27 Sep 92 p 13

[Text] Madras, 26 September (PTI): With corrugated boxes emerging as an effective substitute for wooden cartons in the packaging industry worldwide, the Federation of Corrugated Box Manufacturers of India (FCBM) will initiate measures to make 'eco-friendly boxes' in the country within a year.

The FCBM President, Mr. A.L. Annamalai, told reporters here paper and paper products and wood substitutes were on the Centre's list of 16 products to be granted the 'ecomark' under a scheme on the basis of their environment-friendliness.

Mr. Annamalai, who was briefing newsmen on the FCBM's 21st annual conference, said the Government had authorised the Bureau of Indian Standards to issue the 'ecomark,' and the federation would take steps to acquire the 'ecomark' after studying what needed to be done.

Stating that the eco-marking would become necessary for exporting in corrugated boxes to countries like Germany from next year, he said the corrugated boxes have been considered environment-friendly as their packages were made from re-cyclable material.

The question now was how to produce a 100 percent 'bio-degradable box,' he said.

Mr. Annamalai said corrugated box makers were facing shortage of kraft paper, the main raw material, hindering them from producing boxes to international standards.

The Centre should allow import of at least 50,000 tonnes of kraft paper at concessional import, he said.

The corrugated box industry with an annual Rs [Rupees] 900 crore turnover and consuming about 6.50 lakh tonnes of kraft paper annually, now had to pay 135 percent duty on importing kraft paper, he said.

Referring to the Centre exempting excise duty on kraft paper intended for conversion into corrugated boxes for packaging horticultural products, he said to enable this the State Governments were expected to set up marketing agencies for issuing exemption certificates.

However, many State Governments were yet to do this and the Centre should prevail on them to establish the competent authority immediately, he said.

Opposing the Himachal Pradesh Government's proposed move to privatise a large-scale corrugated box making unit there, he said the licence granted to this unit should be cancelled.

Corrugated box manufacturing was exclusively reserved for the small-scale sector and no industrial licence should be granted to the large-scale sector, Mr. Annamalai added.

### IRAQ

#### **Baghdad Mayor Warns of Environmental Disaster if Blockade Continues**

*JN1610190492 Amman AL-DUSTUR in Arabic  
16 Oct 92 p 2*

[Text] Baghdad Mayor Suhayl Muhammad Salih has said that an environmental disaster will take place in Iraq within the next six months as a result of the blockade banning spare parts that have to do with water channels. He noted that Baghdad is suffering from a lack of spare parts for drinking-water pumps, which has resulted in the breakdown of many of these pumps.

Salih is participating in the meetings of the administrative council and the cooperation fund of the Organization of Islamic Cities and Capitals, currently being held in Amman.

Salih added that the participating Iraqi delegation presented a memorandum to the meeting in which it reported the death toll over the past two years resulting from the blockade imposed on Iraq. The death toll in Baghdad during that period reached 190,445.

He noted that the daily breakdown of sewage networks in Baghdad, as well as the breakdown of a large number of pumps due to a lack of spare parts, could contribute to an environmental disaster. He pointed out that 500 garbage trucks have broken down because of the lack of replacement parts.

He said that Baghdad Municipality had earlier sent messages concerning this issue to all mayors in Islamic states.

He expressed hope that participants in the meetings will work to stop the environmental disaster which might threaten Baghdad if the blockade continues to ban replacement parts and equipment used to preserve water resources and the environment.

### ISRAEL

#### **Desalination Plan To Increase Jordan River Flow**

*93AE0014Z Tel Aviv HA'ARETZ in Hebrew 22 Sep 92  
p B2*

[Article by Yerah Tal: "Jordan, Israel, and Syria Will Draw From the Kinneret"]

[Text] Avraham Katz-'Oz, head of the Israeli delegation to the water issues working group discussions, announced in Washington last week, at the conclusion of another round of multilateral peace talks, that Israel had consented to the Jordanian request to draw an aberrant amount of water from the Yarmulke, estimated at 3.5 million cubic meters. This step was, indeed, perceived as a powerful gesture on the part of Israel, but in light of the many vicissitudes in the water problem between Israel and her neighbors, it is doubtful if this is a real concession. That water that Israel apparently gave up may never have belonged to her.

In the years 1953-1955 Eric Johnston, President Eisenhower's special envoy, put together a plan for solving the conflict between Israel and her neighbors to the east over the use of the waters of the Jordan River and its sources. According to the Johnston plan, Israel was to receive most of the water she required from the Jordan; the Hashemite Kingdom was to get its water from the Yarmulke; Syria, from the Banias and the Yarmulke; and Lebanon, from the Hatzbani.

In February 1955, Israel accepted the program, but the Arab League postponed its decision and promised to find other solutions for the utilization of the Jordan waters and their distribution. In 1964, when the National Water Carrier was being set up, the Arab summit conference decided to prevent Israel from transferring water from the Sea of Galilee to the Negev. Syria tried to divert the waters of the Banias, and Jordan built the Muhayba dam on the Yarmulke. When the Syrians began their diversion of the Banias, the ID [expansion not given] began to bomb the work sites and destroy the equipment. Syria was forced to stop the diversion activity, but the tension remained. Increasing border incidents between Israel and Syria against this background continued up until the 1967 war and were among its causes.

Since the conclusion of the war, the Johnston plan has existed in practice with each country using the water sources within its territorial boundaries. But the Jordanians got the short end of the stick. Jordan uses about 25 percent of the waters of the Yarmulke via the eastern 'Ur canal. About 100-150 million cubic meters of water on average per year, which constitute the winter floods on the Yarmulke, flow to Jordan and are lost in the Dead Sea. The Jordanians had planned to trap those waters by means of the Maqrin dam, which was planned for the upper Yarmulke, but to this day that dam has not been built because of the veto imposed on it by Israel. The World Bank, which was to have financed the construction of the dam, will not authorize the financing because of the Israeli opposition, and the Jordanians have no alternate sources of financing. All of this has caused a worsening water crisis in Jordan, to the point of supplying water in several cities for only certain hours each day. Today there is no more water for distribution from the sources of the Jordan.

Jordan demands a revision in the distribution of the sources of the Jordan, the Palestinians demand exclusive

control over the waters on the West Bank and the Syrians demand the waters of the Banias. Israel refuses all of these demands. The gesture announced by Katz-'Oz is like a drop in the sea, which cannot solve the Jordanians' serious water problem. Not just that, but the waters of the Yarmulke, that Israel has apparently given up, are not actually within her territory. Only a small portion of the Yarmulke is in Israeli territory, in the area where the borders of Israel, Syria, and Jordan come together.

Progress in the bilateral discussions with Jordan and the Palestinians, as well as with Syria, depends to a large degree on a solution to the water problem, and that is possible only by developing new water sources in the Jordan Valley.

The Washington Near East Policy Institute recently published two programs for regional cooperation on the water issue in the Middle East, one propounded by Muqtar Hadadin, a Jordanian, and the other, by Shlomo Gur, an Israeli. The Hadadin program talks about digging a canal from Eilat to the Dead Sea that would exploit the differences in elevation (about 400 m) to create energy, while the water would help raise the level of the Dead Sea and perhaps also be used for irrigation. Shlomo Gur's program, which was designed back before the establishment of the State of Israel, is somewhat similar to the Hadadin plan, and in the past Gur had already proposed it to all the Israeli Governments, to the Jordanians, and to the Americans.

The Gur plan talks about sending the waters of the Mediterranean through a canal, from the Gulf of Haifa across the valleys, to a reverse osmosis desalination facility to be set up in the Beyt She'an valley near kibbutz Ma'oz Haim. In Gur's opinion, because of the difference in elevation between the Mediterranean Sea and the Beyt She'an valley (about 400 m) it is possible to save about 60 percent of the energy consumption needed for the desalination process itself. According to him, the potential exists for the desalination of about 1.3 billion cubic meters of water per year, and the desalinated water would flow into the Sea of Galilee and serve as a water source for the countries of the region—first and foremost for Israel and Jordan, and then also for Syria. At the first stage Gur proposes to desalinate 800 million cubic meters per year at a financial investment of about 3.5 billion dollars, via monies from the World Bank and perhaps also via aid money from the economic powers such as Japan, who have expressed a readiness to assist in furthering peace in the region. Gur suggests that the project be a joint one between Israel and the Kingdom of Jordan, and they would then determine the implementation phases and the water ceilings to be given to each country. According to him, this is the only possible solution that does not carry with it the baggage of historical claims.

For the Jordanians, who suffer from a severe water shortage, this is the only practical alternative, both from the point of view of the amount of water and from the point of view of the financing possibilities. This is an attractive program for Israel, too, Gur stresses. Israel

finds itself today on the threshold of the seawater desalination era, and the desalination industry is very expensive. The increased water that the program would supply would facilitate the restoration and balance of the aquifers along the coastal strip and would prevent a water shortage in Israel.

Unlike the two seas canal program adopted by the Begin Government, the Gur program takes the Jordanians more into account and allows them to enjoy its fruits, as well. "The principle of cooperation is not just a means for achieving economic solutions but is property in the political sphere. Israel could derive political advantage as an intended result of regional planning," says Gur. But he is unhappy about its having been proposed as part of an American document. "Instead of our initiating the proposal of such a program, and thus scoring points in world political opinion and with our neighbors, we left the initiative to the Americans. If we do not take the initiative the Americans will, in the final analysis, force such programs on us, and it is therefore better for us to take the initiative," he says. In his opinion, the announcement by Katz-'Oz on the matter of allowing the Jordanians to draw a larger amount of water from the Yarmulke is nothing but a cover for the lack of initiative and action on the Israeli side.

#### **Gur Proposed, Husayn Added**

Shlomo Gur, about 80, was involved in several of the large Zionist projects in the country. He initiated the design of the National Water Carrier and participated, among other things, in the construction of the Hebrew University on Giv'at Ram, the Tel Aviv campus at Shaykh Munis and the Israel Museum in Jerusalem. For 50 years he has diligently planned for what he considers the largest project, turning the Jordan valley, between the Sea of Galilee and the Dead Sea, into a valley of peace with hydroelectric plants, tourist lakes, and ultra-modern desalination facilities that would solve the water problems of Israel and Jordan.

That the Americans should have presented his program is surprising since it has been well-known to decision-makers in Israel since the 'Eshqol Government. In 1965, upon conclusion of the National Water Carrier project, of which Gur was one of the proponents, it seemed that Israel's water problem had come to a final solution. The Six Day War changed that assumption, and Israel found herself holding territories that included the Jordan valley. No one remembered any more that in the original agreement for water distribution in the north there was also talk of infusing Mediterranean Sea water into the Jordan, so as not to hurt the Dead Sea. The Prime Minister at the time, Levi 'Eshqol, invited Gur in, who was already known as an expert on large water projects, and spoke with him about developing the Jordan valley as a regional program between Israel and Jordan.

Gur responded to the challenge and put together his program. It was passed along to the American Secretary of State, William Rogers, and Rogers passed it on to

King Husayn. When the King flew Rogers in his helicopter above the Jordan valley, he told him that he was ready for cooperation with Israel on the development of water sources, in a "no peace, no war" situation. Ya'aqov Herzog, who was then General Manager of the Prime Minister's office, served as the liaison man with the Jordanians, met in London with King Husayn, and talked with him about the program. Yig'al 'Alon continued the contacts with the King in his capacity as Foreign Minister and Deputy Prime Minister. Thus, a dialogue began between experts from the two countries.

The King's scientific advisor and his staff were invited to working meetings with Gur, some of which took place in his planning office at the University of Tel Aviv and some, in his home. "The Jordanians then stayed in Mishkenot Sha'ananim. Everything was open and a Foreign Ministry representative sat in on the meetings. The King's advisor was a very talented man, and I learned a lot from him. We did not talk about politics," Gur relates. The meetings continued on into the governments of Golda Me'ir and Yitzhaq Rabin.

Two months after the political revolution in 1977, Gur was called in to the new Prime Minister, Menahem Begin, who wanted to hear details of the program. "Begin made it clear that he did not support the program at that stage, because it was still too early to establish a position vis a vis the Jordanians. Nevertheless, he said that he would not stand in the way of its advancement." Responsibility for the project went back to Yig'al 'Alon as chairman of the committee on foreign affairs and defense, and he presented it during the fall session of the Knesset in 1978.

To the central project was added the idea of a deep water port in the 'Arava—a basic idea of the King himself. The King propounded the idea when he met with 'Alon on his yacht at 'Aqaba. He spoke about developing the city and saving it from pollution by boats. A canal one kilometer long from the sea to the 'Arava, he argued, would create a new deep water port and open up precious beaches in 'Aqaba and 'Eilat, for tourism. Within this framework Gur checked with the nuclear physicist Edward Teller, the father of the hydrogen bomb, into the possibility of blasting a canal between the Red Sea and the Dead Sea, using a controlled, underground hydrogen bomb explosion. But such a canal was found to be useless and uneconomical.

Upon the death of 'Alon in 1980, responsibility for the Gur program passed to Yitzhaq Rabin, who replaced 'Alon as head of the foreign affairs and defense committee. The conclusions of the committee with regard to the regional planning project—via a canal from the Mediterranean Sea across the northern valleys to the Jordan—were positive.

Then the two seas program appeared, that proposed a tunnel between the mountains of Judaea and captured the imagination of the politicians. As far as Gur is concerned, who has spent decades checking out the possibilities, that was total foolishness.

The two seas project, in fact, did not come to fruition, but it buried the Gur program for several years, which had seemed to many people to be much more realistic and economical.

## SAUDI ARABIA

### Minister Signs Desalination Plant Agreement

92WN0727B London AL-SHARQ AL-AWSAT  
in Arabic 15 Jul 92 p 10

[Unattributed report: "Contract for Desalination Plant in Yanbu' Signed"]

[Text] A contract was signed in Riyadh, on 14 July 1992, for the second part of the desalination plant project in Yanbu' on the Red Sea coast. The plant will satisfy the water needs of a number of towns and villages in the Medina district. The minister of agriculture and water, and chairman of the Board of Directors of the General Water Desalination Organization, Dr. 'Abd-al- Rahman Al al-Shaykh, signed this contract with the Japanese Mitsubishi Company for Heavy Industries. The project's production capacity will total 30 million gallons per day of desalinated water for Medina, Badr, Yanbu', al-Ra'is, [al-Milih, and al- Musayjid], at a total cost of \$228 million, equivalent to 845 million Saudi riyals. It will take 30 months from receipt of signature to complete the project.

It is worth noting that the contract for the first part has already been signed. This part has a production capacity of 30 million gallons of desalinated water and 150 megawatts of electricity. When work is completed on the two stages, Medina will receive 60 million gallons per day.

### Desalination Achievements Noted

92WN0727A Jeddah 'UKAZ in Arabic 6 Aug 92 p 5

[Unattributed report: Water Desalination Projects in Saudi Arabia; Continual Support, Amazing Results; Desalinated Water Increased Hundredfold in Two Decades"]

[Text] Royal approval has been granted to open bidding on a water desalination project in Jubayl, with a 24-million-gallon per day production capacity (at a cost of 525 million Saudi riyals). The fifth stage of the desalination and electricity generating project in Jiddah has been opened for competitive bidding. It will have a 60-million-gallon per day capacity and will generate 375 megawatts [MW] of electrical power. A desalination and electricity project in al-Khubar has also been opened for bidding, with a 60-million-gallons per day and 375 MW of electricity daily. These projects will provide large additional amounts of water and electricity to cover the requirements of citizens.

These desalination projects have received major support and effort, beginning in 1929 with the "al-Kandasah" project in Jiddah. This made Saudi Arabia a world pioneer in the field of water desalination. Saudi Arabian



production constitutes 30 percent of total world production. This did not develop out of a vacuum, but through rapid efforts and with considerable expenditure. The amount spent on desalination projects through 1991, since the establishment of the General Water Desalination Organization in 1974, totals more than 55 billion riyals. Desalination projects in Saudi Arabia produce 70 percent of potable water requirements and 20 percent of electricity. This report sets forth the kingdom's efforts in the desalination field and the volume of current production.

### I. History

Saudi Arabian interest in desalination began early, in 1929 when King 'Abd-al-'Aziz—ordered the installation of two condensation units to distill seawater. This was known as "al-Kandasah" and was to supply Jiddah with potable water. This was the beginning of desalination in Saudi Arabia.

In 1965, an office was established in the Ministry of Agriculture and Water, whose most important task was an economic feasibility study, preparatory to constructing a desalination plant. In 1969, two desalination plants were built in al-Wajh and Duba', with an estimated production capacity of 60,000 gallons of water per plant. A third plant followed in Jiddah in 1970, with an estimated production capacity of 5 million gallons per day and 50 MW of electricity.

In 1972, the office became the Administrative Department for Water Desalination Affairs in the Ministry of Agriculture and Water. In 1974, royal decree No. 49/m was issued, establishing the General Water Desalination Organization as an independent public organization, in order to give permanence to its work of establishing plants. Desalination plants are either single purpose (to

produce water only) or dual purpose (to produce water and electricity). During the two decades since that time, water production has increased a hundredfold, and electricity eightyfold.

### II. Desalination Efforts

Considerable efforts have been made in the water desalination field, both in investment and in constructing new plants. That was reflected in the volume of desalinated water produced during previous five-year plans. This can be detailed as follows:

1. Investment: The total investment in desalination during the four five-year plans (i.e., during 20 years) was 55 billion riyals. Financial credits allocated for the General Water Desalination Organization during the fifth five-year plan (1989-94) totals 16.798 billion riyals. Credits earmarked for the first year (1989-90) totaled 1.794 billion riyals, and for fiscal year 1991-92, the total will be 1.712 billion riyals.

2. Desalination projects: The number of desalination plants in Saudi Arabia at the present time is 30, including plants in operation or under construction, before royal approval was given to open bidding on the Jubayl project, and the Jiddah (fifth stage) and al-Khubar (third stage) plants.

The number of plants before that was 27, including 21 plants built during the 1st, 2nd, and 3rd growth plans. During the 4th growth plan, eight new desalination plants were built, to bring the number of desalination plants, by the end of the fourth five-year plan to 27 [sic] (5th growth plan, Ministry of Planning, S 217).

The following is a list of the most important desalination plants in the western and eastern regions, both operating and under construction. In addition, there are projects under study, preparatory for implementation, as well as new projects under study.

Table A. Western Region

| Plant                           | Daily Water Production (cubic meters [m <sup>3</sup> ]) | Year Operation Began | Electricity Production (megawatts) |
|---------------------------------|---|----------------------|------------------------------------|
| Jiddah                          | 303,000   | 1970                 | 800                                |
| Medina/Yanbu' 2+1               | 94,000  | 1980                 | 350                                |
| Mecca/al-Ta'if                  | 181,000   | 1987                 | 320                                |
| 'Asir                           | 75,000  | 1987                 | 140                                |
| Haql (1)                        | 950   | 1979                 |                                    |
| Haql (2)                        | 3,785   | under construction   |                                    |
| Duba' 2.1                       | 710   | 1969, 1978           |                                    |
| Duba' (3)                       | 3,785   | under construction   |                                    |
| al-Wajh 2+1 (first rapid units) | 1,350   | 1969, 1978, 1985     |                                    |
| al-Wajh (second rapid unit)     | 1,200   | 1988                 |                                    |
| Umm Lljaj (2)                   | 3,900   | 1985                 |                                    |
| Rabigh                          | 1,400   | 1981                 |                                    |
| al-Birk                         | 1,700   | 1983                 |                                    |
| Farasan                         | 500   | 1978                 |                                    |
| Farasan (2)                     | 1,200   | under construction   |                                    |



Table B. Eastern Region

| Plant                 | Year of Operation | Production Capacity (millions of gallons) | Electricity (megawatts) |
|-----------------------|-------------------|---|-------------------------|
| al-Khafji (1st stage) | 1973              | 0.145                                     |                         |
| al-Khubar (1st stage) | 1974              | 7.5                                       |                         |
| al-Khafji (rapid)     | 1978              | 0.033                                     |                         |
| Jubayl (1st stage)    | 1980              | 36.3                                      | 360                     |
| Jubayl (2d stage)     | 1982              | 253.5                                     | 1,295                   |
| al-Khubar (2d stage)  | 1982              | 51.5                                      | 600                     |

### III. Achievement

The following is actual production of desalinated water for the past five years ( $m^3$ ). Production on the west coast increased from 142,977,654  $m^3$  in 1986 to 251,816,795  $m^3$  of water in 1990. With regard to the east coast, production increased from 339,296,882  $m^3$  in 1986 to 405,090,055  $m^3$  in 1990.

In general, production of desalinated water increased from 482,274,536  $m^3$  in 1986 to 656,906,850  $m^3$  in 1990. Electrical energy generated totaled 18,228,136 MW per hour in 1986, increasing to 24,710,877 MW/hour in 1990.

### IV. The Future

There are several projects that are being studied at the present time, in preparation for implementing, in addition to those projects under implementation. These are closely connected with new water requirements. Whenever there is a need to build a new plant, or to extend pipelines, that need is complied with. The General Water Desalination Organization's production, after completion of current projects, will total 600-million-gallons per day. If we add the three latest projects, which have been approved, future production will reach 744 million gallons per day. This proves that efforts to meet the demand for water are endless and rapid, in hopes of bringing comfort and ease to the nation and its citizens.

## REGIONAL AFFAIRS

### Forest Fires Spread Radioactive Pollution

92WN0813A Moscow TRUD in Russian 29 Sep 92 p 2

[Report by I. Abduragimov, doctor of technical sciences, professor, and A. Odolko, junior scientific assistant: "Difficulty With Home Deliveries; Forest Fires Are Spreading Disastrous Radioactive Pollution"]

[Text] This year huge forest fires have broken out in Russia, Belarus, and Ukraine. The smell of the smoke was felt even as far as Moscow. And whereas in the European part of the country somehow efforts were made to fight this evil, in the vast areas of the Asiatic part of Russia, according to press reports, due to lack of funds to pay for fire fighting aviation, personnel shortages, and reduction in the extent of forest protection operations, an extremely difficult situation has developed.

Sad as it may be, this situation is not new. Forest fires have raged since times immemorial, millions of years before man appeared on the scene. With the appearance of man they merely became more frequent. Today, every year, tens of millions of hectares of timber burn up on earth. This does not pertain exclusively to the coniferous forests in Canada and Siberia; jungles burn and so do moist tropical forests in Malaysia and South America. This is causing tremendous material losses (in our country alone tens of billions of rubles annually). This has greatly worsened the ecological situation! With major fires spread over huge forest masses, the "lungs of the planet" become huge smoke factories.

Of late, however, forest fires have become twice as dangerous. The "peaceful atom" has proved its treacherous nature, and fires have become its accomplice. It is a question not only of burning sites of nuclear power and chemical radiation industries. In addition to the territories of Ukraine and Belarus contaminated by Chernobyl, another 15 oblasts and republics in the western part of Russia are showing a density of pollution with caesium-137, greatly exceeding the standard. Radionuclide pollution affected Chelyabinsk, Sverdlovsk, Tyumen, and Kurgan Oblasts as early as 1949-1952, not only as the result of accidents but also of grossest possible violations of the labor safety and environmental protection rules. Let us add Semipalatinsk and Yakutiya to this list. The threat of radiation pollution of the Kuzbass has now appeared.

The entire problem is that forests act like a kind of radiation dump. As much as 80 to 90 percent of the radionuclides concentrated in the forests accumulate on the forest floor, which is the first to burn in a fire. Some of them accumulate in the ashes which are then dispersed with the wind. However, the bulk, together with particles of smoke, rises into the atmosphere. Fire fighting personnel, forest service employees, and fliers—anyone involved in putting out a fire—are exposed to additional radiation.

Also endangered are those who find themselves inside the smoke-covered area. This essentially applies to the entire population of our country and the entire earth.

This is caused by the mechanism of forest fires. In this case the so-called convective smoke column plays an unfortunate role. In big fires it rises as high as the stratosphere and, acting like a pump, carries the smoke and, with it, the radionuclides, to the troposphere and the stratosphere, where they remain for weeks and months on end, gradually falling on us without our knowledge. Yet even a small dose of radiation could intensify the growth of malignant tumors and even bring about genetic changes in the body.

Unfortunately, for some reason, our Russian press has adopted a rather lighthearted attitude toward the problem of the radiation danger caused by such fires. This can be seen, for example, in publications on the fires in Belarus, affecting areas where the level of pollution with radionuclides may be compared to the level of pollution of the condemned area of the Chernobyl nuclear power plant. Meanwhile, the radiation level during fires has risen several hundred percent.

We, specialists, found it painful to read reports on forest fires in Belarus, which were telecast last August by the Ostankino television company. The fire prevention and forest service personnel are putting out fires in the areas of radioactive smoke absolutely without any means of radiation protection, and even without the leaf electrometers, which are quite well known to those who participated in eliminating the consequences of the Chernobyl accident. Generally speaking, even the "leaves" do not provide full protection from the heat influence of the fire on the physical and chemical status of the radionuclides.

Incidentally, despite its intellectual and technological power, so far mankind has not discovered an efficient way of putting fires out. Only amateurs admire the use of aircraft, for they are totally inefficient.

Specialists have suggested the use of a special helicopter for such purposes, based on the MI-6 model (or the MI-8 MT or else the MI-17) equipped with installations which make it possible to put out difficult forest fires. This would enhance the technical possibilities of fire prevention units by a factor of 5-10 and would save hundreds and millions of rubles.

We have been dealing with this set of problems since 1990. However, we have not carried out the required wide-scale studies which necessitate funds which we are unable to procure, although the respective authority acknowledges the importance of the problem. Yet, since 1986 our fire fighters have already extinguished thousands of such fires. Could it be that we have learned nothing from Chernobyl?

**Isotope Thefts From CIS Cause 'Extreme Concern' in Germany***LD1910133192 Moscow Russian Television Network in Russian 1700 GMT 13 Oct 92*

[From the "Vesti" newscast: Video report by V. Mostovoy and Ye. Zhitkov, identified by caption, from Germany]

[Text] [Mostovoy over video of police with gas masks] A few days ago the Hessen Land criminal investigation police discovered in Frankfurt am Main two contraband containers of radioactive materials. According to experts, both the containers, bearing labels in Russian and containing cesium-137 and strontium-90, had been misappropriated from either scientific or medical establishments in the former USSR, most probably Russia or Lithuania.

The aforementioned materials are unsuitable for making atom bombs but could be extremely dangerous in terrorists' hands.

The police also have information that, in addition to the discovered materials, at least 10 kg of uranium and other radioactive materials have been imported into Germany from the CIS. There whereabouts of these have not yet been established. All these details, and especially the absence of a single, centralized body controlling the storage and production of radioactive materials on the territory of the former USSR, are causing extreme concern among the German public.

[Mostovoy to camera] What is needed are urgent, concerted measures on the part of the competent authorities in both countries to stop the smuggling of radioactive materials. [video shows police with gas masks, container with Russian inscription, left luggage compartments being investigated, police station scenes]

**Nuclear Safety Conference Opens in Moscow***LD1910173292 Moscow ITAR-TASS in English 1614 GMT 19 Oct 92*

[By ITAR-TASS correspondent Rostislav Gertsev]

[Text] Moscow October 19 (TASS)—The conference "Nuclear Safety in the Former Soviet Union" that opened in Moscow on Monday aims to provide journalists with ample information about nuclear safety problems in the former Soviet republics and other countries.

The two-day conference is organized by the Russian-American Information and Press Centre which was set up by the Centre for War, Peace and Mass Media of the University of New York and the Russian Institute for the United States and Canada.

The press centre intends to invite experts for discussions, to use U.S. and European computer databases, publish reference books and bulletins and promote techniques and equipment used in the West in nuclear accidents and other emergency situations, said Robert Karl Manoff, U.S. co-chairman of the conference.

**RUSSIA****Deputy Ecology Minister Assesses Earth Summit Documents***93WN0045A Moscow ZELENYY MIR in Russian No 31-32, Sep 92 pp 8-9*

[Article by Russian Federation Deputy Minister of Ecology and Natural Resources O. Kolbasov, corresponding member, Russian Academy of Sciences: "Rio-92"]

[Text] *The United Nations conducted a conference on the environment in Rio de Janeiro from 3 to 14 July 1992. Very little has been written in our newspapers about this conference. Could ZELENYY MIR provide an article analyzing the documents of this conference?*

[Signed] Vasilii Kryuchkov, associate, Kola Scientific Center, Apatity

Growing pollution of water basins, soil and the atmosphere by industrial, transportation and power production wastes is continuing. For example 12,000 barrels of crude oil are spilled into the World Ocean every day (on a statistical average). The concentration of carbon dioxide and ozone-destroying substances in the atmosphere is rising, the forests are disappearing. In 1990 the planet lost an area of forests equal to the state of Washington—176,000 square meters. Each day 140 species of living organisms are threatened by extinction, and each day 140,000 new passenger cars, buses and trucks are added to the 500 million that are already riding the planet's roads, while the Earth's population increases by 250,000 persons every day.

Three years after it was established in 1984 under the leadership of Norwegian Prime Minister G. H. Brundtland, the Commission for Environment and Development published a report titled "Our Common Future" proposed convening of a world forum to thoroughly analyze the ecological situation. In late 1989 the UN General Assembly decided to hold this conference in Rio de Janeiro in July 1992—20 years after the first such conference convened in Stockholm. Maurice Strong, a Canadian industrialist who had supervised preparations for the UN conference on the human environment in Stockholm—he was subsequently the first executive director of the United Nations Environmental Program (UNEP)—became the general secretary of the preparatory committee for the Rio Conference.

The agenda for the Rio Conference contained over a dozen issues, but the attention of its participants was focused on adoption of three important documents—a declaration on the environment and development (the "Rio Declaration"), a long-range program for subsequent actions on a global scale (the "Agenda for the 21st Century"), and the principles for the sensible use, preservation and development of all types of forests (the "Forest Principles"). Two conventions drawn up within the framework of the conference's preparatory process were submitted to the conference participants and

opened for signing: one on biological diversity, and one on climatic change. In addition a general discussion was conducted from the first day of the conference to the last; in it, representatives of different states and the most important international organizations presented their positions regarding the contemporary understanding of the global ecological problem. One hundred seventy-eight states and more than 30 intergovernmental and nongovernmental international organizations took part in the conference. One hundred fourteen delegations were headed by the heads of state and government.

A public rally of grandiose proportions was conducted in parallel with the diplomatic conference in Rio de Janeiro—the "Global Forum." At least half a million representatives of the world's public organizations associated to one degree or another with the ecological movement participated in it. Scientific discussions, seminars, debates, concerts and exhibitions were conducted here; in them, opinions independent of official powers were stated.

The two-week-long measures in Rio at the beginning of June [sic] of this year will be the object of meticulous study and evaluation again and again. In particular they confirm mankind's greater activity in relation to the ecological problem. But they compel one to ponder whether or not these people are capable of solving this problem.

#### **The Rio Declaration**

Of the three principal documents adopted by the conference, the Declaration appears to be the simplest. It consists of a short preamble and 27 principles.

The preamble states that the Rio Conference supports the Stockholm Declaration of 1972, and that it strives to develop it further, pursuing the goal of establishing a new, just global partnership by creating new levels of cooperation between states, key sectors of society and people. The integrated and interrelated nature of the Earth is recognized, and making an effort to sign international agreements ensuring respect for the interests of all and protection of the integrity of the global system of environment and development is proposed.

Of the total number of principles, five are devoted to human rights, the role of women, the young and local communities, and to the interests of peoples living under oppression. Another three principles declare the need for maintaining peace and for peaceful resolution of disputes. Seven other principles have to do with stable development, and all the rest apply to the policy of states and the international community in the area of environmental protection and regulation of the use of natural resources. This classification of the principles does of course approximately characterize the content of the Declaration, but it leaves open the possibility for making any evaluation one desires of the essence and significance of the adopted wordings.

From my point of view, the Rio Declaration did not signify any great ideological progress in relation to the

1972 Stockholm Declaration. It is easy to persuade oneself of this—just compare their texts.

#### **The Agenda for the 21st Century**

It is completely natural that in order to reach the objectives of ecological development, mankind needs not only the legal base (rules of behavior) but also some sort of objective organizational basis taking the form of a plan of action, a program or a strategy. Such documents having to do with environmental protection usually contain a comprehensive analysis and an evaluation of the current situation, they describe the priority problems, and they determine the timetables and the ways and means of their solution. Among them are the Plan of Action adopted by the Stockholm Conference in 1972, and the World Strategy for Nature Protection, the second edition of which was published in 1991 under the title "Concern for the Earth. A Strategy for Stable Life." The Agenda for the 21st Century also establishes an objective organizational basis for mankind's activity in the area of environmental protection and sensible use of natural resources with the purpose of ensuring the safe and perpetual existence of people on Earth.

The Agenda for the 21st Century is devoted to the urgent problems of today, and it has the purpose of preparing the world to solve the problems it will encounter in the next century. This document is a dynamic program, and it will be implemented by different subjects with regard for differences in the situations, possibilities and priorities characteristic of different countries and regions. This program may undergo change over time, depending on changing needs and circumstances. But in the present period of history it symbolizes the beginning of a new global partnership, one capable of ensuring stable development.

Responsibility for successful implementation of the Agenda for the 21st Century is laid chiefly upon all state structures of legislative, executive and judicial power. But the responsibility of the population itself, of the peoples of all countries in behalf of whom both nongovernmental organizations and large public movements can act, is not excluded either. Great importance is attached to international cooperation: Not a single country can achieve success in solving global ecological problems on its own today. The United Nations is to play the deciding role here in partnership with other international organizations.

The Agenda for the 21st Century is comprised of four sections: social and economic aspects, preservation and sensible use of resources for the purposes of development, reinforcement of the role of the principal population groups, and the means of implementation.

The first section examines eight directions of the program's activity, to include national policy and international cooperation for the purposes of accelerating stable development in developing countries, the fight against poverty, change in the structure of consumption, population dynamics, protection and reinforcement of public health, promoting stable development of population

centers, and consideration of the problems of environment and development in the course of decision making.

The second section discusses protection of the atmosphere, a comprehensive approach to using land resources, the fight against deforestation, desertification and drought, stable development of mountain regions, promoting development of rural areas and stable agriculture, preserving biological diversity and ecologically safe use of biotechnology, protection of marine ecosystems, protection and sensible use of continental waters, and regulation of the use of toxic and dangerous substances, including wastes and radioactive substances.

The third section focuses attention on global actions in behalf of women, children, the young, indigenous peoples and local communities, and on enhancing the role of different categories of laborers, of trade union and other nongovernmental organizations, and of local authorities in solving ecological problems.

The fourth section of the Agenda for the 21st Century determines the financial resources and mechanisms and the informational, scientific, technological, organizational and legal means of solving the ecological problems specified in this program document.

The Agenda for the 21st Century is equivalent in its legal force to a multilateral international treaty. It was adopted by unanimous agreement (consensus) of representatives of states participating in the conference, but without a signing ceremony. This means that the states have assumed a general responsibility for following the principles of the program document in the course of their activities, but it does not signify adoption of individually determined international obligations. Consequently the Agenda for the 21st Century is an act of soft international law, and it will have its influence upon practical matters chiefly by the force of its high scientific and political authority. This document will continue to have the significance of recommendations also in the event that it is approved by the UN General Assembly.

In the course of approval of the Agenda for the 21st Century, examination of numerous debatable issues was followed by attainment of agreement on establishing a special Commission for Environment and Development, which will be the principal component of the organizational and financial mechanism. Of course, the sharpest debate centered on the scale of financing: It was estimated that implementation of the Agenda for the 21st Century on a global scale would require \$600 billion per year, including \$125 billion that must be paid by developed countries to developing countries. In principle, the parties agreed that in the year 2000 and in subsequent years, developed countries will give developing countries financial aid totaling 0.7 percent of the gross national product of each developed country. The Russian Federation and other former union republics and Eastern European states confirmed the special position they hold by forming a group of "countries with a transitional economy," which will provide them the possibility for

deferring fulfillment of financial and other international obligations in the area of environmental protection, as well as other privileges.

### The Forest Principles

A document titled "Nonbinding Statement of Principles for Global Consensus in Relation to Sensible Use, Preservation and Development of All Types of Forests" presents, in succinct form, the generally known principles that forests must be exploited reasonably and carefully, and that they must be restored and protected promptly, inasmuch as they are one of the key components of continental ecosystems, and play a large role in creating a favorable climate and establishing many of the other conditions of stable development.

References to the need for recognizing the key role of all types of forests in the matter of supporting ecological processes and satisfying the demands for energy and different types of industrial raw materials and consumer goods, and in favorably affecting stable development of agriculture, should be noted as the most significant entries. This document also contains principles that people often forget. For example that sensible use of forests must be coordinated with sensible use of contiguous regions, and that in conjunction with exploitation of forest resources, the life, culture and rights of indigenous peoples and other population groups inhabiting forested regions must be respected and adequately reinforced.

It is noteworthy that in formulating the forest principles the authors turned attention to the need for eliminating factors that unjustifiably restrain sensible use of forests for the acquisition of wood products. It is indicated in one of the principles that all forms of unilateral actions directed at limiting or prohibiting the use of wood and other forms of wood products in international trade must be excluded, because such measures produce negative results in regard to long-term and stable, sensible use of timber resources.

Nonetheless, it must be recognized that the issue of the state of the planet's forests has now grown in urgency in connection with the fact that clearly pronounced deforestation processes are occurring. Unrestrained logging must of course be bridled in this connection, including by regulating international timber trade more closely. In addition efforts to renew the forests must be stimulated in every possible way, establishing certain privileges for countries in which these efforts are conducted the most vigorously. Cooperation between interested countries should also be developed on a regional basis to achieve strict protection and restoration of beneficial forest ecosystems. Mention should be made in this connection of a recently begun grandiose international project titled "The Green Lungs of Europe," in which the Russian Federation is actively participating as well. The essence of the project is to protect and maintain in good condition the large forests that still survive in certain places, to put them in order, and to gradually expand them.



Most importantly, we must base ourselves on the notion that although defense and protection of forests by each state on its own territory is that state's sovereign right, for practical purposes such protection acquires international significance because whatever the condition of a forest, it has significant transnational consequences.

#### **The Convention on Biological Diversity**

The need for showing special concern for biological diversity has arisen in connection with the fact that a negative process of disappearance of animal and plant species under the influence of human activity has clearly manifested itself on Earth.

The Convention on Biological Diversity was drafted by work groups of specialists and by experts under the auspices of UNEP through a process of negotiation, and it was opened for signing by the heads of state and government or their authorized representatives at the UN Rio de Janeiro Conference on 5 June 1992. The first to sign it was Brazilian President Fernando Collor, who was then followed by representatives of around 150 states. The convention will become effective on the 90th day from the day of submission of the 30th document of its ratification, adoption, approval or joining beginning in September, with a term of 1 year. The convention will be open for signing in the United Nations headquarters in New York. The goals of the convention are to preserve biological diversity, stable use of its components and joint acquisition, on a just and equal basis, of the benefits of using genetic resources, including through provision of the necessary access to genetic resources, through appropriate transfer of the corresponding technologies, with regard for the rights to such resources and technologies, and through adequate financing.

The United States refused to sign the convention because in President G. Bush's opinion the convention does not reflect the interests of the United States in matters of financing, transfer of biotechnologies and protection of the rights of intellectual ownership. As was noted, the United States cannot fulfill the responsibilities of ensuring priority access to results and benefits ensuing from biotechnology because development and use of such technology is under the control of private business.

It should be noted that although the Convention on Biological Diversity is not referred to as being a framework, it is in fact so, because it primarily contains general principles which will require more-specific treaties, protocols and other agreements for their implementation.

The convention foresees diverse measures for the preservation and stable use of biological diversity both in the natural environment and in artificial conditions, and it prescribes measures by which to stimulate and control all forms of manipulations of living organisms and of influence upon them (in industry, in experimentation and so on), imposing the responsibilities of developing national strategies, plans and programs specially devoted to preserving biological diversity upon the states (the parties to

the treaty). The convention also imposes the responsibility for examining measures to preserve and make stable use of biological diversity in the corresponding sector and intersector plans, programs and policy on the states.

The question as to how extensively this convention may affect regulation of biotechnology remains debatable to some extent. It, after all, is devoted to preserving biological diversity, while the issue of biotechnology is of independent significance, and it will probably require independent legal regulation.

#### **Climatic Changes**

The United Nations Convention on Changes in Climate, which was opened for signing at the very beginning of the work of the Rio Conference, qualifies itself as a framework convention by its very name. It contains general prescriptions for states and peoples relative to behavior in the conditions of climatic changes going on under the influence (so it is presumed) of human activities.

The convention is based on the idea that change in the Earth's climate and its unfavorable consequences must be an object of concern of all mankind. Its implementation requires the widest possible cooperation among all countries.

The end goal of the convention and of legal documents associated with it, which may be adopted in the future by a Conference of Parties, is to achieve fulfillment of the corresponding principles of stabilizing the concentrations of greenhouse gases in the atmosphere at a level which would not present a danger of anthropogenic influence upon the climatic system.

The convention foresees the obligations of the parties to draft, publish and submit to the Conference of Parties national cadasters of anthropogenic discharges from various sources and of absorption of all greenhouse gases by absorbers, to compile and implement programs to prevent climatic change and reduce its consequences, and to support and develop universal cooperation in the pursuit of the convention's goals. These obligations are described in rather great detail, and with regard for the different positions of the countries.

The developed countries carry extremely significant responsibilities in relation to developing countries. For example they are obligated to provide new and additional financial resources with which to cover all of the agreed-upon expenses of fulfilling this convention. Developing countries that are especially vulnerable to the negative consequences of climatic changes are to be provided assistance by developed countries in covering the expenses of adapting them to these consequences. They are also obligated to offer developing countries ecologically safe production processes on advantageous terms.

It is stated in regard to the financial mechanism that it functions under the guidance of the Conference of Parties and that it is answerable to it. The conference

determines its policy regarding whether to provide financial resources without compensation or on advantageous terms, including for the transfer of technology. Program priorities and the criteria for selecting projects to be financed are determined as well. The work of the financial mechanism is inspected every 4 years.

As with the Convention on Biological Diversity, the Convention on Change in Climate was opened for signing during the Rio Conference, and now it will be available for signing over a period of a year beginning this September. It is subject to ratification, adoption and approval by states and regional organizations of economic integration, and it will become effective on the 90th day after the 50th document on ratification, adoption, approval or joining is submitted for storage.

#### The Work of the Russian Delegation

The Russian Federation was an active participant of the UN Conference on Environment and Development in all of its phases. During the preparatory period, Russian specialists worked with specialists of other countries on drafts of the principal documents and decisions of the conference, as well as drafts of the conventions, at the same time helping to determine the position of our state in regard to questions concerning the content of the work of the conference. During the conference itself the members of the Russian delegation took part in its plenary meetings, session committees and work groups. Russia's National Report on the State of the Environment was distributed, Russian Federation President B. N. Yeltsin's address to the participants of the conference was read, and speeches were given by Russian Federation Vice President A. V. Rutskoy and Russian Federation Minister of Ecology and Natural Resources V. I. Danilov-Danilyan in the course of the conference. A. V. Rutskoy signed the conventions on biological diversity and on climatic changes in the name of the Russian Federation.

The national report characterized the natural, climatic, social and ecological conditions of the country, including its natural resource potential and the scale of its use, the state of the natural environment, sources of pollution, regional ecological problems, state policy and administration in the area of nature use and environmental protection, and public ecological awareness.

The speeches emphasized that the state of the Russian environment is alarming. Discharges into the environment, which total around 130 kg per capita per year, the tailings and dumps of mining enterprises, waste dumps occupying tens of thousands of square kilometers, the polluted water of most rivers and lakes in inhabited regions, radioactive contamination of vast territories—all of this has already caused deterioration of natural ecosystems, and it is only the vastness of Russia's territory that spares its nature from total degradation.

A production slump, disarray in economic ties, and a highly acute shortage of investment resources are typical of the Russian Federation. Solution of ecological problems will require enormous efforts, resources and foreign

assistance. Nonetheless the people themselves must act as the principal force, since they possess such a great material and intellectual potential. A definite system of nature protection has evolved in Russia, but it requires reinforcement and improvement. It is precisely along this road that new possibilities for promoting stable development will appear.

The Russian delegation exerted considerable effort to defend the position of recognizing a special status for states with an economy in transitional state, which gives these countries, including Russia, certain advantages in examining the questions of financing natural activity, transmitting technology and making contributions to international funds.

#### Significance and Future of Rio-92

As an event of worldwide significance, the United Nations Conference on Environment and Development will have a great influence on all aspects of the life of mankind now and in the future. And for this influence to be maximally effective, particularly in the Russian Federation, the decisions and other materials of the conference must be brought to the awareness of the deputy corps, government officials, all categories of specialists and the broad strata of the population. The materials of the conference must be published, and the ways, forms and methods of implementing decisions of the Rio-92 conference must be explained and proposed. Discussion of the essence of these decisions and the mechanisms of their implementation must be introduced into secondary school and VUZ programs.

The conference should have a great influence on the ecological and legal mechanisms of managing the life and activities of mankind. In the economic aspect, we will obviously have to increase the role of ecological factors in the conditions and evaluations of production, trade and consumption, in the tax mechanism and in social priorities; we will have to critically reexamine national and international legislation, plans and programs currently in effect and coordinate them with decisions of the conference, and we will have to take full account of the decisions of Rio-92 in new acts pertaining to the society's economic and legal regulation. In other words all aspects of life that are associated one way or another with environmental protection and regulation of nature use must be subordinated to the decisions of the Rio Conference to the necessary degree. However, results cannot be perceived dogmatically. We should not think that mankind's creative search for solutions to global ecological problems has ended. Many of the key issues never were resolved within the framework of the Rio Conference.

*The title of the conference contains the words "environment and development," which must symbolize our understanding of the relationship between ecology and economics. From my point of view, this aspect of the matter was not brought home completely in the conference. Nor was the main question examined or solved in*

*Rio—how to guarantee mankind's consistent and unconditional fulfillment of the ecological requirements of which the people are already aware, so that not only presently existing problems but also any new ones that may arise could be solved. There are no dependable guarantees for this, or in the least, they have not been identified. The search must be continued, and preparations must be made for more conferences of this kind in the future.*

**Ordinance on Forming Agency To Implement UNCED Decisions**

935D0021B Moscow ROSSIYSKAYA GAZETA  
in Russian 22 Sep 92 p 4

[Ordinance of 19 August 1992, No 1522-r Moscow]

[Text]

1. Adopt the proposal of the Ministry of Ecology of Russia concerning the creation of an interagency commission for the elaboration of proposals on the implementation of decisions of the UN Conference on the Environment and Development (June 1992).

Include in the interagency commission representatives from the Ministry of Ecology of Russia, the Ministry of Economics of Russia, the Ministry of Foreign Affairs of Russia, the Ministry of Industry of Russia, the Ministry of Agriculture of Russia, the Ministry of Finance of Russia, the Ministry of Health of Russia, the Ministry of Science of Russia, the Ministry of Justice of Russia, the Ministry of Transport of Russia, the Ministry of Fuel and Energy of Russia, the Ministry of Information and the Press of Russia, and of other interested ministries and agencies of the Russian Federation and the Russian Academy of Sciences.

Appoint V. I. Danilov-Danilyan, minister of ecology and natural resources of the Russian Federation as head of the commission.

2. The interagency commission to prepare and submit the following to the government of the Russian Federation:

By 1 November 1992—the draft of a national plan of action for implementation of the decisions of the UN Conference on the Environment and Development, as well as proposals on the participation of Russia in the General European Conference "Environment for Europe";

By 1 December 1992—proposals concerning approval of the Convention on Climatic Change and the Convention on Biological Diversity, coordinated with the Ministry of Foreign Affairs of Russia

3. The Ministry of Ecology of Russia and the Ministry of Information and the Press of Russia to ensure availability of information for the public on results of work carried out by the UN Conference on the Environment and Development and decisions adopted by it.

[Signed] Ye. Gaidar

**Draft Law on Radiation Safety To Undergo Further Review**

92WN0813B Moscow NEZAVISIMAYA GAZETA  
in Russian 22 Sep 92 p 6

[Report by Andrey Bayduzhiy: "Law on Radiation Safety of the Population Submitted to the Government"]

[Text] The collegium of the State Committee for Medical-Epidemiological Control approved for further consideration a draft Russian Federation law "On the Radiation Safety of the Population," commissioned by the government to a group of scientists from the Leningrad Radiation Safety Scientific Research Institute. According to this law, the per-capita maximally admissible radiation dose is set at 0.1 rem per year, excluding natural and medical radiation sources. In the case people who handle radioactive materials, this standard has been raised to five rem per year, which is consistent with the standards adopted by most European countries. All enterprises using sources of ionizing radiation must be licensed. One of the conditions for obtaining a license is making payments to a special insurance fund to compensate the population in the event of a radiation accident.

The draft law stipulates the right of citizens, public organizations, and information media freely to obtain from local self-governing authorities objective information on the radiation situation. Individuals guilty of concealing or distorting such information will be held administratively or criminally liable. The basic indicators of the level of population radiation safety will be recorded annually in the region's radiation-hygiene passport. Citizens who live in territories with higher radiation risk, or in the vicinity of enterprises handling sources of ionizing radiation have the right to compensations, the procedure and amounts of which to be determined by the government. The right to be compensated for the damage caused by any radiation effect will have no statute of limitations. Various types of liability are stipulated for the theft, illegal acquisition, storage, or damage to sources of ionizing radiation or for holding unsanctioned meetings in sites where such sources are located.

It is anticipated that in addition to the radiation safety law, Russian nuclear law will consist of three other laws: on nuclear weapons, the use of atomic energy, and state policy pertaining to radioactive waste.

**Nation Plans To Boost Titanium Production**

OW2110212192 Moscow INTERFAX in English  
1928 GMT 21 Oct 92

[Following item transmitted via KYODO]

[Text] Russia's government has asked the Republican Economics Ministry and Committee for Metallurgy to work out by next December jointly with other departments a program to develop the titanium production industry and make its output more competitive. In keeping with the government's instruction, the program must provide for developing titanium deposits and

building on their basis ore dressing complexes with a total output of up to 500 thousand tons of titanic concentrates a year.

Besides, the program must envisage the modernization of the titanium-magnesium complex in Berezniki, the construction of a similar enterprise with a capacity of up to 40 thousand tons of titanium a year, the construction of a number of enterprises to produce components for titanic alloys, and the creation of "a network of enterprises to collect and recycle scrap titanium".

The cabinet also instructed the Economics Ministry and the Committee for Metallurgy to calculate the sum necessary to implement the program. The money is to come from insurance and investment funds.

In the future, these bodies will work out and include in annual interstate contracts with Ukraine, Kazakhstan and Tajikistan a point on mutual titanium shipments.

Last summer, Russia and Kazakhstan already concluded a five-year deal to jointly implement a program "Titanium and Magnesium", which provides for coordinated efforts to set up facilities for titanium production in the two republics and supply raw material and equipment to the titanium-magnesium complexes in Ust Kamenogorsk, Kazakhstan, and in Berezniki.

### **Half of All Russians Drink Unhealthy Water**

93WN0021B Moscow NEZAVISIMAYA GAZETA  
in Russian 30 Sep 92 p 6

[Article by Andrey Bayduzhiy: "What Is Pouring Out From Our Faucet? Half of the Country's Population Consumes Unhealthy Water"]

[Text] The fact that the water which we drink does not correspond to world standards, to put it mildly, is best of all known by foreign diplomats. In most of the Western embassies in Moscow they have long ago excluded tap water from their rations, replacing it with various fruit juices and mineral water beverages. The former American ambassador to the USSR, Jack Matlock, specially ordered pure drinking water from Finland. Yet millions of Russian housewives, whether they like it or not, must fill their teapots and pans daily with the solution pouring out of their household tap.

Several figures illustrate what this could mean for them. One in eight samples of tap water in the country does not meet the standards for bacteriological indicators. In other words, one in every eight water lines contains water which at any moment might become the cause of viral hepatitis, dysentery or some other infection. Moreover, one in five water lines supplies water which is substandard in its chemical indicators, and in 10.4 percent of them the content of chemical substances poses a health hazard. In other words, in drinking his morning cup of coffee, the average resident risks getting an increased dose of lead, mercury or phenol along with it.

Ninety percent of the water lines today supply water which does not meet hygienic standards, and poor

quality water is consumed by half of the country's population. However, this does not mean that the other half can relax: Control over water quality in Russia is performed only for 28 indicators, while according to the recommendations of the World Health Organization (WHO) adopted in most developed countries, it should be checked for 59 parameters, and this year it is proposed that this number will practically be doubled. Therefore, if some water line is not on the "blacklist" of a sanitary-epidemiological station, this certainly does not mean that the water in it is safe for one's health. Perhaps the harmful component has simply escaped the field of vision of the sanitary-epidemiological service.

City water lines get their water from underground sources or open water reservoirs. As a result of human economic management activity, both these sources have become collectors of harmful substances: Highly toxic organic compounds, petroleum products, phenols, heavy metal salts and biological components. Despite this fact, one-third of all water lines using water from open reservoirs do not have a complex of purification structures, while one-fourth do not have a zone of sanitary protection. Under these conditions, doctors see the only method of saving the population from infection as being the mass application of chlorine. During floods and torrential rains, it is dissolved in the water practically in horse doses. Yet while alleviating one danger, chlorine gives rise to another: Highly toxic chloroorganic compounds are formed in the drinking water, including those of the dioxin series, which pose the most serious consequences to health.

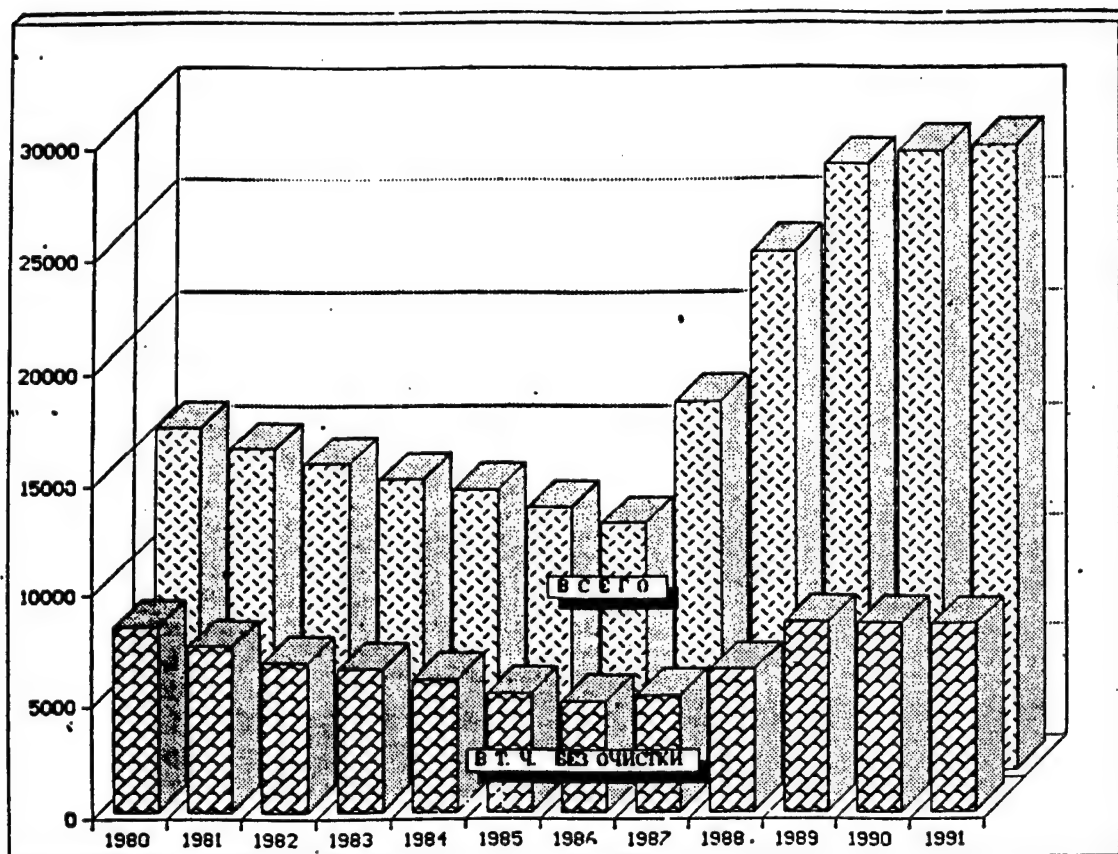
An especially difficult situation with the supply of drinking water has arisen in Karelia, Arkhangel, Astrakhan and Saratov Oblasts and, of course, in Moscow. Up until recently, the water in the latter was considered to be the best in the USSR, but the cutting of forests and intensive housing construction in the watershed zones have led to the fact that the quality of water in the Moscow River water reservoirs—one of the two sources of drinking water supply to the capital—is approaching a critical state.

In the opinion of specialists, the boundlessness in the sphere of water supply may be stopped only by the adoption of strict water legislation. The first step in this direction has already been taken: At the request of the Russian government, a committee on sanitary-epidemiological inspection, together with the former Gosstandart [State Committee on Standards] has developed a draft law, "On Providing the Population With Drinking Water." If it is adopted, the relations in the sphere of drinking water supply will be changed over to a clear legal and market basis. Owners of water supply systems, who may also be private individuals, will begin to conclude contracts with their subscribers, which will specify the rights and responsibilities of the water consumers and suppliers.

Up until recently, the natural resources in the country cost almost nothing. This led to the situation that it was not profitable for enterprises to purify and recycle waste



Data on dumping polluted waste water into water facilities in the Russian Federation for the period 1980-1991 (million cubic meters)



Key:

a - Total

b - Of this, without purification

water. The law must interest economic managers in creating closed water purification cycles. Fines will be set for excessive use of water over the allocated standards.

The new legislative statute can also make a breach in the financial success of water line owners. They will have to bear the responsibility for the harm inflicted to the health as a result of the water's non-compliance with sanitary-hygienic standards. Considering the fact that for the present day the water in most Russian water lines does not meet these standards, practically any resident of the Russian cities can file suit against the water management. In the USA, where the law on quality control of water has been in effect since 1974, the daily loss from consumption of poor quality water comprises around \$20 million. We can only guess as to the amount of this sum in our country, but it is clear that the figures here will be an order greater. Yet in order to perform reconstruction and repair of the existing water lines, sums numbering in many millions would be needed, but under

the current economic conditions the city authorities simply have nowhere to obtain these funds.

#### Satellite Records Ozone Hole Over Russia

93WN0024A Moscow NEZAVISIMAYA GAZETA  
in Russian 3 Oct p 2

[Article by Ivan Storozhev: "Does Russia Have Its Own Ozone Hole?"]

[Text] According to a report by the press service of the Russian State Committee for Hydrometeorology and the Environment, information has been obtained from the Meteor-3 satellite according to which the ozone content near the South Pole has declined by more than half.

The Antarctic minimum in the ozone field, which is called an ozone hole, is regarded as one of the most vivid manifestations of human impact on the ozone layer. The Antarctic ozone hole was discovered in 1985 and is observed during the Antarctic spring—in October. In



1987, 1989, 1990 and 1991 this decline over the Antarctic Continent reached 40 percent. This year these record minimums will be surpassed. However, the anomalous quality of 1992, unfortunately, does not end with a sharp increase in the hole over the South Pole.

First of all, researchers at the Central Aerological Observatory have grounds for supposing the presence of a stratospheric cyclone that is isolating the ozone layer over Antarctica and preventing its renewal. Second, 1992 has become a year of decline in the ozone layer over Russia: previously a seasonal decline (in the winter and spring), this year it continued during the summer, and there are no grounds for assuming it will end soon.

Over the territory of Moscow the ozone level was approximately five percent lower than the climatic norm. The situation stabilized somewhat in August, but in September another reduction was observed, and an ominous tendency is emerging.

At present the sharpest decline has been in the ozone layer over the Far East. On the whole, this year the average monthly deviation for Russia has been 10 percent to 15 percent off the norm, and up to 40 percent off on given days.

The reduction in the ozone layer threatens an increase in the incidence of skin cancer and cataracts, as well as a general disturbance of the immune system.

### State Reports on Environment, Health Summarized

93WN0026A Moscow NEZAVISIMAYA GAZETA  
in Russian 7 Oct 92 p 6

[Unattributed report under the "Exclusive" rubric: "Today State Reports on the Condition of the Environment and Public Health Will Be Made Public (Even in Short Exposition They Are Capable of Shocking)"]  
[Maps published with report are not included in this translation]

#### [Text] Population

The annual population growth in Russia is clearly on the downswing. While in 1980 it was approximately 1 million, by 1989 the growth had decreased by half and was only 0.2 million. According to official statistics, as of 1 January of this year, there were 148,704,800 people living in Russia.

The reduction of the population growth was related, on the one hand, to the lower birthrate, and on the other, to the higher death rate. Thus, while in 1981 the birthrate coefficient per 1,000 people was 16, in 1991 it was 12.1. The death rate coefficient increased during this period from 9.9 to 11.4. Thus, the coefficient of the natural growth of the population dropped from 5.1 to 0.7.

The number of territories of the country where the death rate exceeds the birthrate increased from 10 in 1989 to 29 in 1991. Now the highest birthrate is in Dagestan, and the lowest—in Tula and Murmansk Oblasts.

As of today, the average life span of women is 74.3 years, and of men—63.8 years.

#### Incidence of Illness

Judging from the materials of the report, the unqualified leader in the structure of illnesses were diseases of the respiratory system. Experts note that there was a tendency toward the reduction of the level of acute illnesses and a corresponding increase in chronic ones.

Among chronic illnesses in adults, a large share were diseases of the circulatory system—20 percent. Of every 1,000 people, 89 suffered from this. The incidence of illness comes mainly among people in over-40 age groups and reaches its maximum level in people 60 years of age and over.

There were fewer cases of tuberculosis in Russia. The incidence of this decreased from 47.2 cases per 100,000 people in 1980 to 31.8 in 1991. But along with this, there was an increase in the frequency of the appearance of neglected forms of this disease. The highest incidence of tuberculosis was noted in Kalmykia—68.2 cases per 1,000 of the population. Among the nationalities of the North, the incidence of tuberculosis is five times greater than the average for the country.

The level of diseases of the endocrine system is high. Last year two percent of all residents of the Russian Federation were registered with these. But experts think that in fact the real number of patients is three to five times greater.

From 10 to 20 percent of the population of Russia suffers from various allergic conditions.

The number of people suffering from oncological diseases is on the rise. Today there are 391,300 of them in Russia. By the end of the millennium, according to predictions of specialists, there will be 480,000 of them. And the average life span of cancer patients is decreasing steadily and significantly.

Taking data from medical surveys into account, the level of neurological illnesses is reaching 120-140 cases per 1,000 people.

And the incidence of strokes is five to six cases per 1,000 in the population. The largest number of these are found in Siberia and, naturally, they are encountered most frequently among city dwellers.

From all appearances, in the area of stomatological aid, Russia was indeed in last place on the planet. Some 98 percent of the population suffer from diseases of the teeth and gums, and experts say that among the elderly this indicator is 100 percent. Two-thirds of the teeth of the average statistical 40-year-old Russian have decay. More than one-fourth of the population need prostheses, and this is true of absolutely all elderly people.

As it turned out, we have not been very successful in our fight against venereal diseases. It is rather the opposite: From 1988 through 1990 alone, the number of officially reported cases of syphilis increased by one-fourth.

Naturally, the human immunodeficiency virus is transmitted most frequently through sex. But 31.4 percent of those infected are children, to whom this, of course, does not apply. In Russia a total of 558 infected people have been registered, and 81 are already ill. According to official data, AIDS has been the cause of death of 51 people. There have been 392 foreign citizens infected with the HIV virus deported from the country.

In recent years in Russia, there have been an average of 46 million cases of infectious diseases reported each year, from which 19,500 people die each year. The lion's share of them have been influenza and upper respiratory infections—90 percent. Physicians are especially alarmed about chicken pox, German measles, and scarlet fever, since the country has no means of fighting these infections. Because the population is becoming increasingly mistrustful of the quality of the vaccines that are used, there has been a rapid decrease in the number of children who are vaccinated. As is indicated in the report, only 59 percent of the children have been vaccinated against whooping cough, 69 percent against diphtheria, and 71 percent against poliomyelitis. The largest number of cases of whooping cough are in St. Petersburg, and diphtheria—in Moscow and Moscow Oblast.

Among the intestinal infections the leading one is dysentery. It comprises up to 35 percent of all the illnesses of this kind. As strange as it may be, last year the largest incidence of dysentery was found in Kaliningrad Oblast. In the opinion of experts, the main sources of intestinal infections are products of enterprises of the dairy industry and public catering, and also dining rooms at children's institutions. Because of the last of these, one-fourth of all cases of illness are found in children attending preschool institutions.

Each year 2 million people suffer from parasitic diseases. But these are only the officially registered cases, and, according to the estimates of medical experts, one must add to this figure another 20 million a year. The ones most likely to fall ill are representatives of peoples populating the North, Far East, and Northern Caucasus, and also the petroleum and gas extraction workers of Western Siberia and the Urals foothills and construction workers on "national economic projects." For example, construction workers on BAM [Baykal-Amur Mainline] suffer from diseases caused by worms three times more frequently than the local residents do.

The incidence of gastroenteritis has more than doubled. From 80 to 90 percent of the cases are registered in the Urals, Siberia, and the Far East.

There is no contrast at all between the nation's psychological health and its physical health. The number of patients receiving psychological treatment is 6,460,800, which is 4.4 percent of the total population. City dwellers suffer mainly from schizophrenia, neurosis, and alcoholism. Statistics tell us that residents of Moscow and St. Petersburg have the greatest chances of ending up among the mentally ill. And only mental retardation is found

most frequently in rural areas. The patients in psychiatric institutions are predominantly men. The incidence among them is five to 10 percent higher, and they become alcoholics seven to eight times more frequently.

As before, alcoholism is one of the most serious Russian ailments. Indirect evidence of this was the increased incidence of the acute alcoholic psychosis, called d.t.'s among the people. In just two years, the number of cases per 100,000 of the population increased from 5.1 to 9.7. It is thought that the real number of patients suffering from alcoholism is up to 3.5 percent of the population. People drink most in Western Siberia, the Far East, and the Central Economic Region. As of the beginning of this year, direct harm from alcoholism was estimated at more than 70 billion rubles [R].

We have fewer drug addicts, thank God. But still, it is quite obvious that the official statistics—28,300 for all of Russia—bear no relation to reality. But it is asserted in the report that drug addicts comprise no more than 0.1-0.2 percent of all the population. The majority of them take drugs manufactured by amateurs. Some 55 percent prefer preparations made from poppies, and one-fourth—preparations made from hemp. The people who compiled the report singled out a special group of people who obtain narcotic satisfaction from some "non-traditional" method. Among those who misuse and abuse nontraditional substances, one-third are adolescents, and seven percent are children under 14 years of age. And 80 percent of these people are male. Some 40 percent use psychotropic substances, and 20 percent make do with household chemicals. Clearly, it is impossible to give a precise figure for these kinds of substance abusers, but according to data from anonymous questionnaires, the risk group (those who have tried to use toxic substances) among youth amounts to 9.7 percent.

As of today in Russia, there are 4.4 million disabled persons. Each year 800,000-900,000 are declared disabled, one-fourth of whom are people of working age.

Some 81.4 percent are disabled persons of groups I and II. The main causes of disability in Russia are diseases of the circulatory system, oncological diseases, and injuries.

### Maternity and Childhood

There is nothing surprising about the fact that the people who created the section of the report devoted to women's health drew special attention to the sexual behavior of adolescent girls. According to data of a selective study conducted in Moscow, the average age for the beginning of sexual activity among them is 16.5 years, and one in four of them does not have a permanent sexual partner, which inevitably leads to increased incidence of venereal diseases and a higher risk of HIV infection. One in three has been pregnant in the past, and each year more than 30,000 abortions are performed on women under 17 years of age.

As for abortions in general, in 1991 3.5 million of them were performed within the walls of state medical institutions. This is twice the number of newborn babies

appearing in the world. The proportion of abortions taking place outside the hospital is 15.7 percent. Last year, abortion was the cause of death of 267 women. Only 26.4 percent of abortions are performed in the early stages of pregnancy, when it is less dangerous for the health of the woman. And only 20.3 percent of women use modern contraceptives.

Against this background, it is understandable why obstetric complications are observed in 53.4 percent of pregnant women. And it is emphasized in the report that upon additional investigation with modern methods of evaluation, pathology will be discovered in 75.1 percent of pregnant women. Complications are observed during 40-47 percent of births.

The writers of the report do not give any absolute figures about infant mortality. But from the diagram shown here, it follows that in 1991 there were about 17.9 cases of infant death for every 1,000 newborns that lived. Of course, infant mortality rates are higher in rural areas and lower in the cities.

When the Russian Federation switches to international criteria for calculating infant mortality, its level will increase by approximately one-third over the number registered at the present time, and there will be a simultaneous reduction of the indicators of expected life span.

From 1980 through 1991, the level of illness in newborns increased from 82.4 to 173.7 cases per 1,000 births. According to estimates of experts, by the year 2015 the proportion of healthy children among newborns will decrease to 15-20 percent. Up to 60 percent of the children have symptoms of rickets and suffer from eczema, and 10 percent—from anemia.

The production volumes of children's food satisfy the demand for milk formulas by 49 percent, canned fruits and vegetables—13.5 percent, and canned meats—15 percent.

It is especially emphasized that children's illness rates increase sharply when they enter preschool institutions. Most of the children who fall ill are in the age group of up to four years. This might seem strange, but in the structure of their illness the leading position is held not by the so-called childhood diseases—measles, mumps, etc.—but, as in adults, respiratory diseases—65.7 percent; and then diseases of the nervous system; and only in third place are infectious and parasitic diseases—5.2 percent.

The figures presented in the report show that the school affects the child's health in precisely the same way as the children's preschool institutions do. Children who start school at six years of age have a higher incidence of general illness, including psychological disorders. In 12-15 percent of the six-year-old first graders, disturbances of speech development were discovered. By the end of the first year of school, 57.5 percent of the children develop asthenia, which is manifested in frequent headaches and disorders in sleep and the emotional sphere.

About 53 percent of schoolchildren are in weak health, and by the end of school, only one-fourth of them can be called healthy. The situation is worst of all in St. Petersburg and its oblast, where only three to four percent of the graduates are healthy.

More than 160,000 Russian children are reared in various kinds of orphanages and boarding schools, and 90 percent of them have parents. The report says nothing about the condition of the health of these children, but it is quite obvious that this picture would be even more striking.

The authors of the report assert that if the medical commissions of the military commissariats were guided by world standards of suitability for military service, only 20 percent of the overall number of inductees would end up in the military service. But now in Russia 152 out of every thousand are deemed unfit for service in the army. In just two years, the number leaving the army because of their health increased by 30 percent.

#### Modus Vivendi

The recognition of health as an independent value comes with age. The researchers arrived at this somewhat banal but absolutely indisputable conclusion as a result of sociological studies conducted from 1986 through 1992. Some 38.6 percent of the respondents assert that they had significantly to change their life plans because of their health. And 10 percent of all migrants assert that they moved because of medical factors. Only 31.3 percent of rural residents and 23 percent of city dwellers consider themselves healthy. Bureaucrats and workers in the nonproduction sphere suffer most from chronic illnesses—46.4 percent. Workers are ill less—40.7 percent, and the healthiest are the peasants—39.9 percent.

A healthy way of life is unpopular in our country, and self-critical Russians do not try to conceal this. Some 77 percent of men and 41.6 percent of women characterize their way of life as negative. Only 23.1 percent of those questioned stated that they regularly engage in physical exercise. During the past decade the number of sportsmen (not professionals) decreased from 23.9 million to 10.1 million. The majority of us simply have nowhere to engage in sports, since the provision of sports facilities satisfies only 30 percent of the need.

As statistics show, working conditions leave something to be desired. Working in places that do not meet the requirements of labor safety are 5 million people in industry and 1 million construction and transportation workers. Sanitary-hygienic norms are not met by 4.3 million workplaces. As for the equipment we produce, only 20 percent of its volume can somehow meet these norms.

It is quite natural that occupational disease is on the rise in Russia. It has doubled in the past five years. The number suffering from it is reaching 11,000 per year. In 1990, R4 billion was spent on payment of compensations to people working under harmful conditions. Half this amount was spent on measures for improving labor.

Harm to the health caused by poor working conditions is exacerbated by poor nutrition. During the past year in Russia, according to data of the report, consumption of practically all food products decreased. The deficit of full-value proteins is 250 percent, vitamins A and B—30 percent, and vitamin C—50 percent.

And 11 percent of the samples of food products do not meet quality standards. Up to five percent of all the provisions in Russia contain heavy metals in excess of the maximum permissible concentrations.

The situation is no better with drinking water. Almost half the water given to the population does not meet hygienic norms. Each year in Russia there are 75,000 broken water mains. Secondary pollution of drinking water because of this has been the cause of outbreaks of infections in Udmurtia, Tuva, and Kirov and Ivanov Oblasts. A direct connection has been established between chemical pollution of drinking water in Amur, Kurgan, Kemerovo, and Novgorod Oblasts, and in Mordvinia, and the appearance of mass disorders of the central nervous system, nephritis, hepatitis, toxicosis in pregnant women, and also the increased number of stillborns and children with birth defects.

#### Environment

Bacterial and viral pollution of practically all the main rivers of Russia, including the Volga, Oka, Kama, Don, Kuban, and Oblast basins exceeds the permissible amount tens and hundreds of times over.

The air in Russia, mainly in the cities, is affected to the same degree. Only 15 percent of city dwellers breathe air that meets hygienic norms. And 50 million people are experiencing the effects of an entire assortment of harmful substances in concentrations of 10 times the maximum permissible amounts. To these one must add their 60 million compatriots who have been luckier and receive "only" five times the maximum permissible amounts. But in Russia there are 84 (!) more cities for which 10 times the maximum permissible amount is not the limit. Incidentally, the capital is included among them.

Of course, it is not just the air and water that are polluted by industrial discharges. The report emphasizes that the figures on the volume of production wastes "cannot be considered reliable," since state statistics, like accountability for wastes, are simply lacking. Nonetheless, the overall number of wastes accumulated by Russia is estimated at 50 billion tonnes, to which another 4.5 billion are added each year. More than 250,000 hectares of land have been buried in wastes.

About 70 percent of the toxic industrial wastes of the former USSR have ended up on the territory of Russia, which amounts to more than 1.6 billion tonnes. They are stored and placed in dumps and waste heaps that cover more than 1,000 hectares in Murmansk, Orenburg, Tyumen, and Chelyabinsk Oblasts and Krasnoyarsk Kray.

Yet there is not a single enterprise in Russia for decontaminating and burying such wastes that would fully meet modern requirements.

An especially critical situation has developed with radioactive wastes, the majority of which are located in storage facilities and burial grounds that do not meet modern safety standards.

According to preliminary calculations, within Russia a most unfavorable ecological situation is found on an area of 2.5 million square kilometers, which constitutes 15 percent of the territory of the entire country. On Russian territory there are 13 regions where the ecological situation may be regarded as critical.

#### Accidents and Disasters

In 1991 in Russia there were 264 technology-related accidents, in which 1,023 people died and 2,693 suffered. The greatest losses come from accidents which, according to the data of the authors of the report, make up 57 percent of the occurrences of this kind. They were the cause of death of 88 percent of the victims of accidents. The greatest number of human lives are lost in automotive accidents. Last year 760 people died and 1,880 were injured in 171 large accidents.

Last year 413 accidents involving dangerous cargo on railroads were reported. And 280 of them led to pollution of the environment. The main reason for these accidents was the use of tank cars in disrepair.

The domestic petroleum and gas complex is a kind of record holder with respect to the number of accidents. According to estimates of experts, accident situations arising in the process of operating main petroleum and gas lines run into the tens of thousands. And enterprises of this same branch are the main parties guilty of polluting the air and water basins.

In 1991 there were 165 disruptions of the operation of energy blocks of nuclear power plants. And RBMK reactors [high-power channel reactors] (the so-called Chernobyl type) broke down much less frequently than the other kind that is widespread here—VVR [water-cooled reactor]. With the RBMK, the number of cases was 58; with the VVR it was 107. Of these disruptions, 37 were in the category of insignificant occurrences, two—accidents of medium severity, and two more—serious accidents. Included among the last are pollution of the industrial site of the Bilibino Nuclear Power Plant when transporting radioactive wastes and the accident at the Smolensk Nuclear Power Plant, which were characterized in the report as "violation of the regulations of the auxiliary process."

And the picture of the ecological trouble on the territory of Russia continues to be determined by large cases of radioactive pollution that occurred in the past.

The nuclear weapons tests conducted at the Semipalatinsk testing grounds from 1949 through 1963, in the opinion of experts, exerted a significant influence on



people's health in Altay Kray. According to their estimates, 1.56 million people here have been affected by radioactive pollution. The result of this was an increase in the incidence of malignant tumors.

The territory of the Southern Ural region was subjected to radioactive pollution in 1949-1956, 1957, and 1967. There are 965 people living in the Tech River basin who have been officially registered as having radiation sickness. Among the 17,000 people reported, the incidence of leukemia has increased by 41 percent. Moreover, the death rate among them exceeds the death rate among the population not subject to radiation by one-fourth.

For Russia the accident at the Chernobyl Nuclear Power Plant resulted in pollution of parts of Belgorod, Bryansk, Voronezh, Kaluga, Kursk, Orel, Leningrad, Lipetsk, Ryazan, Tambov, Tula, Penza, Smolensk, and Ulyanov Oblasts and Mordvinia.

On the affected territories there are 7,700 population points, and 2.34-2.7 million people live there.

In Bryansk, Kaluga, Tula, and Orel Oblasts, they have set off so-called off-limits zones, resettlement zones, and "zones with the right to resettlement," in which about 440,000 people live.

By the beginning of this year in the Russian Federation, there were on the medical rolls 1,366,742 people who had been exposed to radiation because of the accident at the Chernobyl nuclear power plant.

In 1991 in Russia, according to the data of the creators of the report, 116 natural disasters were reported, as a result of which 13,486 people were injured and 112 died. Statistics show that the greatest danger is presented by tornadoes, hurricanes, and floods. About 7,000 people suffered from outbreaks of dangerous diseases, of which 45 were reported, and 15 people died.

#### **Condition of Public Health and Nature Protection**

There are now 675,600 physicians and 1,691,000 secondary medical workers in the sphere of public health. There are 10,879 hospitals and 1,186 outpatient facilities in the country. Last year 31 million people went to hospitals.

One-fourth of all the currently operating hospitals were built before 1940. Some 46 percent of the hospitals and almost one-third of the polyclinics are in need of capital repair. And 42 percent of the hospitals and 30 percent of the polyclinics do not have hot running water; sewage facilities—18 percent and 15 percent, respectively; and water supply in general—12 percent and seven percent, respectively.

Violations of sanitary-hygienic norms were found in 70 percent of the hospitals and polyclinics. Only one-tenth of one percent of the patients were in one- or two-bed rooms, and the majority of them—61 percent—had to be in wards with six to 10 beds. The most astonishing situation is in the sphere of obstetric and pediatric care. For example, of the 33 outpatient obstetric facilities in the capital, only nine meet modern requirements. The

supply of medical equipment in children's and maternity institutions is half what it is in the general network.

As for medicines, the population's demand for them was satisfied by only 70 percent. Priority in providing them was given to zones that suffered as a result of the accident at the Chernobyl Nuclear Power Plant and the coal regions of Russia.

In the area of the protection of nature, in addition to organizational measures, which include the creation of a new Ministry of Ecology and the adoption of a number of legislative acts, 267,080 enterprises of Russia were investigated. And it was revealed that 18.5 percent of them were violating the established norms for discharges. Administrative charges were brought against 52,667 people, and the sum of fines amounted to R3 million. And the enterprises had to pay R195.4 million.

Thousands of small and medium-sized business enterprises were operating in the sphere of the ecology. According to expert evaluations, their overall financial turnover exceeded R1.6 billion. But specialists say that in terms of the ecology, their activity is not very effective, and they point out that frequently the ecology is used only for advertising or in the hope of obtaining various benefits.

Moreover, the market for ecological services was served by more than 40 commercial banks, two specialized exchanges, and more than 200 brokerage offices. It is noted that the commercial structures are trying to take over the monitoring and expert evaluations, which could ultimately lead to a lowering of the level of state regulation of the quality of the environment.

#### **Krasnoyarsk GES Thins Yenisey Ice, Creates 'Chemical Fogs'**

*93WN0023A Moscow IZVESTIYA in Russian 7 Oct 92 Morning Edition p 2*

[Article by Aleksey Tarasov: "Those That Unfroze the Yenisey Should Freeze It"]

[Text] Having built the Krasnoyarsk GES [hydroelectric power plant], we are reaping the fruits: In winter the river does not freeze over hundreds of versts. The constant fog due to this absorbs the technogenic waste in the kray center and the residents of a city of almost 1 million breathe the crystal particles—complexes of carcinogenic substances. On the average, the number of diseases connected with respiratory tracts in Krasnoyarsk is 2.5-fold higher than in Russia.

This has been the case for many years. September comes and the city on the Yenisey is again in a dense fog. And again journalists are gathered at a press-conference in order to present the next idea for freezing the river. There has already been a great number of them. Older colleagues recall how P. Fedirko, first secretary of the party kraykom [kray party committee], demonstrated a model of one of the technical solutions of the problem to



them. Only nothing has changed and the world surrounding the people of Krasnoyarsk remains topsyturvy: The Great Russian river has ceased to be a provider and during a sharp frost it flows as though it were summer and in summer it is impossible to enter it—it is only plus four degrees centigrade. One of the springboards for an ecological disaster?

Scientists and engineers, finding, in their opinion, a method of binding the Yenisey with a coat of ice, today agonize over the following question: Where to get the money for the realization of this idea? However, the planners of the Krasnoyarsk GES, who have committed such a "negligible" mistake in calculations—the Yenisey freezes 350 km, not 30 km, after the dam—feel absolutely not implicated in the kray's ecological troubles. At a press conference they cited the answer of Gosenergo to the question by the Krasnoyarsk municipal council: The existing evaluations of the effect of open reservoirs on the ecology of adjoining territories are of a purely emotional nature. In brief, wiggling out of this by hook or by crook, power engineering workers do not feel like debtors to the people of Krasnoyarsk.

Everything seems to indicate that the kray is left with one of two things: Either to bring a suit against the all-powerful department and to exact the sum necessary for the realization of the project—as compensation for the damage done to people's health (Siberians have recently become familiar with this practice—in August our newspaper reported on the suit of many millions of rubles brought by the people of Krasnoyarsk against nuclear scientists)—or to demand the transfer of the GES to municipal ownership. This idea was heard at the press conference held within the walls of the kray administration—Moscow receives income from the operation of the GES, but Krasnoyarsk is left with fogs swelling with chemical substances. Well then, the realization, for example, of the last plan of those presented to the press will require the receipt of instruments of payment from GES operation during only one month.

Furthermore, the Sayano-Shushenskaya GES—also a "miracle of hydraulic engineering"—is located higher up the Yenisey. Recently, with reference to Moscow engineer P. Khlopenkov, reports have appeared in the press to the effect that, if one of the annual Yenisey floods is much stronger than usually, the dam of the Sayano-Shushenskaya Station can be destroyed and a 200-meter wave with the speed of an express train will wash away every living thing downstream—not only Krasnoyarsk, but also the nuclear city of Krasnoyarsk-26. I omit the arguments and evaluations of the justifiability of such a conclusion. Why does the Ministry of Fuel and Power in no way comment on this and other similar reports? Why is the spiritual peace of the residents of the Yenisey region of no value to it?

### **Eco-Friendly Petrochemical Plant Goes Ahead in Tyumen**

*PM0910140592 Moscow Teleradiokompaniya Ostankino Television First Program Network in Russian 0600 GMT 8 Oct 92*

[From the "Novosti" newscast: Video report by N. Astafyeva and V. Nikolayev, identified by caption, from Tyumen Oblast]

[Text] [Announcer to camera] Two years ago, the construction of five chemical complexes was planned in Tyumen Oblast. Despite active opposition from the Greens, the Novourengoyskiy Complex has survived.

[Astafyeva over video of construction site] It will be operating on cheap local raw material—ethane gas. Provisions have been made to ensure that the operation of this processing plant inflicts minimum damage on the environment in the future. Incidentally, even the construction of the project is being conducted quite sensibly. A road, power lines, pipelines, and railroad sidings have been built without actively disrupting the life of the tundra. Wherever construction work has been completed, land recultivation is immediately carried out. Grass sown directly into the sand has sprouted almost everywhere.

With the commissioning of the Novourengoyskiy chemical complex another gas flare will be extinguished, and a new industry—plastics production—will develop in the north of Tyumen Oblast. [video shows extensive views of new chemical complex construction site]

### **Fatal Sewage Plant Explosion Pollutes Don River**

*93WN0024B Moscow TRUD in Russian 9 Oct p 1*

[Article by Aleksandr Isayev: "Explosion at Main Pumping Station"]

[Text] Rostov-on-Don—On 7 October a powerful explosion occurred at the Rostov Main Sewage Pumping Station. The building was almost completely destroyed. There were casualties. One worker died on the spot and a second died in the hospital.

As a result of the accident water service to several enterprises and residential blocks was interrupted. Water is being hauled to them. Fecal sewage is flowing into the Don. The sanitation agencies are carefully monitoring the condition of the river.

The circumstances of the accident are under investigation. Some specialists believe that it was a gas explosion.

### **Future of Udmurtia Lewisite Dumps Debated**

*PM1410155192 Moscow Russian Television Network in Russian 2000 GMT 10 Oct 92*

[From the "Vesti" newscast: Video report from Udmurtia by V. Dynin and S. Fedorov, identified by caption]

[Text] [Video shows field] [Dynin] People would hardly have thought about how to destroy 6,000 tonnes of lewisite, a toxic agent based on arsenic, 40 years ago when siting a chemical weapons dump in the city of Kambarka. Stormy debates are now under way as to the future of the lewisite. Should it be burned or converted into arsenic that could then be sold? To all appearances, it has only been decided that these weapons will cease to exist in Udmurtia. [Video shows inside of chemical weapons dump, various metal tanks]

### **Geological Prospecting Causes Pollution in Kamchatka**

*PM1410104392 Moscow Teleradiokompaniya Ostankino Television First Program Network in Russian 1800 GMT 10 Oct 92*

[From the "Novosti" newscast: Video report by Igor Minayev, identified by caption]

[Excerpt] [Minayev, seen dipping a glass into a river and drinking from it] How many rivers are there left in our country from which you can draw water and simply drink it without being afraid of catching dysentery, cholera, or some other disease?

Thank goodness, such rivers still exist in Kamchatka. Salmon still abound in them. It might appear that there is absolutely no cause for concern. The whole place is like a nature reserve. Population density is one person per square kilometer. There are no chemical or metallurgical plants. True, there are a few old heating plants, but the Oblast Administration is gradually closing them down. It sounds like an ecological idyll.

Not quite. Geological prospecting teams are declaring war on nature. Here and there explosions have already rung out. A few streams used by salmon as spawning grounds have been spoilt. The point is that Kamchatka's wealth comprises not only fish, but also oil, gas, and gold.

A debate has now flared up at the oblast soviet. Should mineral deposits be developed, or should nature be left in peace? According to ecologists, the geological lobby is gaining the upper hand. The logic of this cannot be denied. Kamchatka cannot live of fish alone. Money is needed for building roads and housing. [181900] [interviews with local administration official and nature reserve official omitted] [video shows nature and city scenes]

### **Edict on Nature Conservation Areas**

*935D0030A Moscow ROSSIYSKAYA GAZETA in Russian 15 Oct 92 p 5*

[Presidential Edict on Especially Protected Natural Territories in the Russian Federation, issued 2 October 1992]

[Text] With a view to ensuring the ecological safety and preserving the national natural heritage of the peoples of Russia, I hereby decree:

1. It is hereby determined that the preservation and development of especially protected natural territories is one of the priority areas of the Russian Federation's governmental ecological policy.

2. Together with the executive authorities of the republics within the Russian Federation and kray, oblast, and autonomous formations, the government of the Russian Federation shall:

Draft an efficient network of state natural reserves and national natural parks, which will stipulate that the expansion of the areas of such territories shall not exceed three percent of the area of the Russian Federation, including the territories of the former military training grounds, and the stages and time needed for the implementation of the stipulated measures, the amounts of their material-technical support, and financing from the republic budget of the Russian Federation;

Use in financing the planning and research effort needed for the creation of state natural preserves and national natural parks nonbudget ecology funds;

Develop and implement steps to improve the management of state natural preserves, national natural parks, and other especially protected territories and strengthen the social protection of their personnel and reliable safeguard of state natural preserves and national natural parks and the strict observance of the regime applicable to the especially protected natural territories.

[Signed] B. Yeltsin

### **Sakhalin Oblast Body Questions Sea Floor Deal With Japanese**

*OW2110102392 Vladivostok Radio Vladivostok Network in Russian 0815 GMT 15 Oct 92*

[From the "Pacific Ocean" program]

[Text] Last week we told you about the meeting of the Sakhalin Oblast Malyy Soviet at which a business deal between the Moscow company PKP Okean Ltd. and the Japanese Sea Floor Trawl Fishing Association, which received rights to 40,000 hectares of sea floor near the northeastern coast of Sakhalin, was discussed. The deputies were indignant over the flagrant plunder of our ocean resources. Strangely, representatives of Sakhalin-rybvod maintained there was nothing illegal in this deal. How are events developing today? Our Sakhalin correspondent, Ivan Vorobyev, reports.

[Begin recording] [Vorobyev] As soon as the furor surrounding this contract arose, the Japanese vessels hurriedly left our economic zone; now it is doubtful if the level of damage caused by this barbarous fishing can be assessed. However, documents began surfacing that reveal the mechanism by which it is becoming possible to plunder our ocean resources. I will remind you that on 15 August a contract was concluded between the Russian PKP Okean Ltd. and the Japanese (Donsakaren) Sea

Floor Trawl Fishing Association for catching 2,100 tonnes of various species of commercial fish and crustaceans.

The purpose of the catch is scientific, and the period of operations is from 20 August to 31 December. However, the scientific program reached the Malyy Soviet, literally in the last few days, and only then could specialists from Sakhtinro and Sakhalinrybvod acquaint themselves with it. Now their position has become clear, together with the arguments of those who conceived and initiated the contract. I will read a letter received by the Malyy Soviet from Anatoliy Kostin, the chief of Okean. Do not let the terminology of the former chief of the Sakhalin CPSU Obkom Fishing Industry Department confuse you:

Respected Mr. Aksenov and respected deputies: You should all be well aware of the condition of the nation's economy. In order to save the science branches and the fish protection agencies from collapse, as a temporary solution to the existing situation Komrybkhoz has been able to find resources for the financial support of the said organizations. Those resources consist of .0004 percent of the potential catch in the Sakhalin-Kuril region, which as you understand cannot cause a serious loss to nature. In the interest of the industry, a 225 million ruble [R] loan was taken, from which R115 million has already been invested in financing scientific research, planning and design, and fish protection agencies.

As expert opinion in the given documents has shown, no serious breach in the issue has been established. The work was to be conducted in accordance with the current law and under observation of the fish protection agencies. The departure of vessels was envisaged to correspond with the readiness of the inspectors and scientists. As a result of the decision taken by the Malyy Soviet, huge losses are incurred because of penalty clauses in the contract, as well as on the loan from our banks. An extraordinary situation has developed. The Malyy Soviet is stopping the most important work of the state, without solving the issue of the financial consequences of this measure. If suspicions are not removed and full guarantees for the continuation of the work given, I and my partners cannot continue the work which has been created on Sakhalin. I hope the Malyy Soviet will show statesman-like wisdom and will not allow itself to be drawn along the path of continued disintegration of the science branch, a most important branch of the country's food complex. Dated 7 October. With respect, Kostin.

Alas, the Malyy soviet did not see the statesman-like wisdom in selling the sea floor to the Japanese. I am speaking with Galina Pavlova, member of the Malyy Soviet.

Galina Nikolayevna, I have acquainted myself with the documents of mister or comrade—probably comrade would be more correct, if you consider their style—Anatoliy Ivanovich Kostin. He writes more or less like a head of government [words indistinct]. What is Okean? It would appear that it alone is financing Sakhalinrybvod, Primor'rybvod, and almost all our science.

[Galina Pavlova] Okean is just a common private company. As a matter of fact, we have a similar company here on Sakhalin, also a PKP, only it is called Atika; it is headed by Ivan Yakovlevich Knyazev, and they cooperate with each other.

[Vorobyev] Ivan Yakovlevich was second secretary of the Korsakov CPSU Gorkom. Fine, God bless him! But I am interested in Anatoliy Ivanovich Kostin, who in the last telegram threatens the soviet chairman that he will have to somehow compensate the loss of 76 million yen which Kostin received from the Japanese partners.

[Pavlova] He is proposing that we determine who should be responsible for paying the penalties. I can simply say the payment of fines should be made first by Anatoliy Ivanovich Kostin, second by Mr. Slavskiy....

[Vorobyev interrupting] Deputy chairman of Rosrybvod?

[Pavlova] Yes, Rosrybvod... and then obviously to all the other comrades who took part in formulating this contract and in granting permission for an activity in which bottom trawling lines are used.

[Vorobyev] You have had the opportunity to familiarize yourself with the scientific aspect of this program, so here is a question for you, as a former scientific worker. It seems to me this program simply is not justifiable.

[Pavlova] Our Malyy Soviet is acquiring significance in the scientific sense, and for the first time the scientific program we are looking at was properly received by the Malyy Soviet. By agreement, Sakhtinro and Sakhr'bvod were to be headed by the Sakhr'bvod chief, but instead of this we have a blank spot. Mr. Yelizarov, the director of VNIIRO [expansion not given], approved the program, while Anatoliy Ivanovich Kostin says that Sakhr'bvod has all the relevant documents except the program. As a scientist I can rightfully assure you the program is the fundamental principle on which all other documents are formulated. Besides, the confirmation of the program was delayed because there was no program leader.

[Vorobyev interrupting] We are dispatching....

[Pavlova interrupting] We are dispatching it on 8 or 9 October. It was signed on 17 August by Mr. Dudnik, chief of the Ocean Fish of Sakhalin and the Kuril Islands Sector. The director of VNIIRO confirmed it on the same day. See how effectively he works. As a scientist of 15 years standing, I have formulated scientific programs many times for my own work, and of course from my own point of view this program is absolutely abstract. The scientific premises here are completely obscure. There is no scientific material or substantiation on the basis of which this work can be started. The aim of the research raises very serious doubts. Here they talk about long line and net methods of fishing, however permission is granted for bottom trawling.

Now, if we examine the contract it says there should be one specialist—a scientist—and an interpreter on all these vessels, but in accordance with the program there

should be six scientific workers. On 17 August this scientific program was ratified, but the contract which was formulated after that confirms exactly the opposite. So then if this scientific program is worthless, why in heavens name was this fishing operation organized? Our fishing and scientific organization are partly to blame. Why are they so passive about it all!

[Vorobyev] It is quite understandable. In one of his telegrams Kostin threatens to take away the R65 million allocated to them.

[Pavlova] Unfortunately our fishing science is completely dependent on financing by these so-called good uncles of ours, insofar as there is no financing within the budget. Naturally our science then becomes dependent on these businessmen. While we were discussing it and making decisions in the Malyy Soviet, these vessels raised anchor and left. In fact, we have no access to them, and in general our fish protection agency—Sakhmorinspektsiya—leads a pitiful existence. It has no vessels or transportation of its own. It cannot operationally contact or travel to those vessels. Measures are being taken to eliminate all traces of them.

[Vorobyev] It is one more indication that this venture has no scientific aim. It has the idea of ripping off....

[Pavlova interrupting] Of course it was a commercial idea. If there was some serious scientific task posed, then it would have been discussed first with our fishing and scientific organizations on Sakhalin.

[Vorobyev] At present, all the documents are being analyzed by specialists—scientists, fisheries specialists, and lawyers—and a final decision will be made at a regular session of the Malyy Soviet. One hopes the representative powers will not limit themselves only to the evaluation of this business deal, but will take measures so that similar shady enterprises are not repeated. [end recording]

#### **Russia, Finland Cooperate on Energy-Saving Project**

*PM2110102992 Moscow ROSSIYSKIYE VESTI  
in Russian 17 Oct 92 p 3*

[Nadezhda Ilinskaya report: "Projects: Russia-Suomi Energy Bridge. International Cooperation Needed To Resolve Our Complex Problems"]

[Text] Energy saving is becoming the main priority in Russian energy policy. On average we waste around a third of all our energy resources, and the energy-intensiveness of our national product is double that of West Europe.

The long-term energy-saving program makes provision for international cooperation. Among our partners is a Finnish state concern, the "Imatran Voima" joint-stock company, which has engaged in fruitful cooperation with the republics of the former USSR since the fifties.

The idea behind the Russian-Finnish energy-saving project can briefly be expressed as follows: It is a

question not of increasing power capacities but of placing the emphasis on state-of-the-art technologies, equipment, and management systems. Finland is offering Russia its experience of energy use. Thus, in the manufacture of industrial output, paper, and cement it expends half the amount of energy as Russia. Moscow consumes three times more energy heating buildings than Helsinki, although both capitals are located in the same climate zone.

"The energy-saving project has already begun to be implemented," Vladimir Kozlov, UN expert and "Imatran Voima" regional director in Moscow, says. "Nine model installations have been chosen in Karelia and St. Petersburg to introduce energy-saving technologies. These include three pulp and paper combines, three thermal power plants, and three heating systems with heating networks as well as end consumers."

Existing experience shows what new technology can do in regional boiler and heating networks in Leningrad Oblast. In 1988 the "Imatran Voima" concern concluded a contract to supply a complete heating system "on a turnkey basis" for the city of Mudangyang in northeast China. Today one power installation producing a combination of heat and electricity has replaced 800 small coal-fired boilers. More than 650,000 of the city's inhabitants have ceased to breathe the stench of environmentally harmful discharges.

This July the "Imatran Voima" concern received Russian President B.N. Yeltsin, who studied the work of an electricity station in Naantali. Its cleaning filters pick up around 98 percent of the light ashes—a closed technological cycle—in line with Finnish environmental norms, which are among the toughest in the world.

During the initial stages the Russian-Finnish project will be funded with Finnish backing. Further reciprocal transactions with regard to introducing new technologies and supplying equipment will be conducted on the basis of the energy resources saved. Energy will always be comparable to hard currency. What is more, reciprocal transactions will be able to take into account exports of the modernized enterprises' output. The "Imatran Voima" concern's Moscow management is holding an exhibition where you can study the program for energy saving in industry and in the home and hold consultations.

#### **Norwegian 'Greens' Threaten Russian Nickel Combines**

*93WN0021A Moscow NEZAVISIMAYA GAZETA  
in Russian 30 Sep 92 p 4*

[Article by Boris Vayl: "Norwegian 'Greens' Threaten Russia With Diversary Actions; Plan To Involve Former 'Afghans'"]

[Text] The Norwegian "greens" have announced that they will fight by all means—including "ecological terror and diversion"—to close the nickel combines in the villages of Nikel and Zapolyarnyy of Murmansk Oblast



near the Norwegian-Russian border, which annually pollute the atmosphere over northern Norway with 300,000 tonnes of sulfur dioxide. The Norwegians believe, including also at the government level, that the environmental pollution caused by the combines located on the Kolsk Peninsula is their country's most serious ecological problem.

The ecological movement, "Stop the Clouds of Death," which unites around 4,000 residents of northern Norway, already conducted protest actions a year ago in Nikel and at the point of intersection of the boundaries of the three states—the USSR, Norway and Finland. People of various political views participated in this movement. "Stop the Clouds of Death" publishes its own bulletin of the same name, printed in Russian.

The modernization of the nickel combines and their adaptation to ecological requirements is quite possible, but requires huge expenditure. Norway and Finland are ready to "present" Russia 640 million kroner for this purpose, but the Russian authorities have announced that a sum in almost seven times that amount would be needed. "However, there is a limit to what a small country like Norway, with its four million population, can pay in order to stop the pollution coming from another country," writes the Danish newspaper POLITIKEN.

Soviet specialist Rune Kastberg from the Friethoff Nansen Institute in Oslo believes it unlikely that the population of the Kolsk Peninsula will support the actions of the Norwegian "greens," despite the grave ecological situation in this region. "The living standard of the workers at the nickel combines," he writes in the newspaper DAGBLADET, "is so high that other Russians can only dream of it."

Observers believe that the threats of the Norwegian "greens" should not be taken seriously. Nevertheless, having undertaken the protest actions, they may lose control over the course of events. Especially considering the proposed cooperation of the "greens" with the Russian "Afghans."

#### **Aid To Clean Up Kola Nickel Foundry Emissions Rejected**

*PM0810094592 Moscow IZVESTIYA in Russian  
3 Oct 92 Morning Edition p 6*

[Marat Zubko report: "The Finns and Norwegians Need Clean Air on Kola Peninsula. What About Us?"]

[Text] Helsinki—On the Kola Peninsula the Nickel Combine will continue to pollute the environment, not only of Northwest Russia, but also of the countries of Northern Europe—that is how local papers comment on the collapse of a Norwegian-Finnish plan to reconstruct the nickel foundry, which we rejected.

The press reminds its readers that this combine discharges 300,000 tonnes of sulphur into the atmosphere per year, which has a destructive effect on nature and on people living in the Nordic region. The Finnish and

Norwegian authorities jointly proposed to Russia a plan to redesign the plant so that it would reduce its discharge of toxic substances by 95 percent.

They agree to appropriate roughly \$100 million for these purposes. However, Oslo and Helsinki newspapers claim that Russian spokesmen have stated that this option does not suit them, and that the aid should be at least doubled.

Norway's AFTENPOSTEN cites the statement of Russian Minister of Ecology and Natural Resources V. Danilov-Danilyan, who was attending a meeting of environmental protection ministers of the North European states and stated that under this plan expenditure on reconstructing the nickel combine would not be recouped for 16 years, and it needed to start yielding profits within five years.

This hyperpragmatic approach, completely discounting human and environmental factors, has provoked deep disappointment in Nordic capitals.

#### **Murmansk Hosts Conference on Kola Peninsula Pollution**

*PM1510090592 Moscow Teleradiokompaniya  
Ostankino Television First Program Network  
in Russian 0600 GMT 12 Oct 92*

[From the "Novosti" newscast: Video report by V. Anuchin, A. Uchinin, identified by caption, from Murmansk]

[Text] [Announcer to camera] A directorate of the Ministry of Security has turned its attention to environmental protection in Murmansk. It gathered representatives of the public, the Prosecutor's Office, Northern Fleet servicemen, and ecology specialists for a special council.

[Anuchin over video of meeting] Questions pertaining to the ecology of the Kola Peninsula were the focus of attention of the people gathered here. Unfortunately, those particularly guilty of inflicting irreparable damage on nature—representatives of the "Severonikel" and "Pechenga-Nikel" Combines and the "Apatit" Association—were not present. They would have had a lot to account for.

I will cite just a few figures from the report by the head of the security directorate and illustrate them with pictures. Some 126,000 hectares of forest have been affected, or rather destroyed by these giant plants' discharges into the atmosphere. Annually 20 grams [as heard] of sulphur anhydride fall on every square meter of Kola territory. Centuries will be needed for nature to recover its original shape here. The shaded areas on the map denote large areas where ecosystems have been completely destroyed. These areas are spreading over the entire territory of the Kola Peninsula. And as one of the speakers noted, the whole of Murmansk Oblast is subject to air pollution.



In addition to this, the Northern Fleet has contributed its share to the pollution of the environment. [video shows burning ship] Under a veil of secrecy, nuclear waste from nuclear submarines is being buried. The Kola estuary is polluted with petrochemical products.

Has the time not come to move from words to deeds and exact liability in compliance with the Russian law on environmental protection for the damage inflicted? [video shows meeting, pictures of industrial installations, devastated land, burning ship, moored submarines, maps]

### **Greenpeace Vessel Accused of Violating Russia's State Border**

#### **Border Guard Actions**

*LD1210182392 Moscow ITAR-TASS World Service  
in Russian 1523 GMT 12 Oct 92*

[By ITAR-TASS correspondent Roman Zadunayskiy]

[Text] Moscow, 12 Oct—Early today the commander of the "Ural" Russian border patrol ship received permission from the commander of troops in the North-Western Border District to fire warning shots to prevent provocations from the "Solo" expedition vessel, which belongs to the "Greenpeace" ecological organization. This morning the ship violated Russia's state border, penetrating its territorial waters by 1 mile.

After warning shots from the patrol ship's naval guns, the "Solo" heaved to, a representative of the Supreme Command of the Russian Navy told an ITAR-TASS correspondent. An inspection group of Russian border guards boarded the vessel. The border guard has the right to inspect the vessel, question the crew, and study ship documents for five hours.

According to the representative of the Supreme Command, depending on the results of the inspection, talks with the crew, and other factors, the "Solo" can be taken by the "Ladoga" border tugboat to the port of Naryan-Mar, escorted by Russian border ships.

According to the Russian border guard, the "Solo" has violated Article 31 of the Russian Federation law "On the State Border." The ecologists are suspected of illegally gathering information in Russian territorial waters to the detriment of the Russian state and conducting illegal research in Russia's economic zone. Also, they are suspected of refusing to comply with the Russian border troops' demands aimed at ensuring the protection of the Russian Federation state border and of an unsanctioned shipping operation in Russian territorial waters, a reference to the fact that the ecologists launched a boat this morning.

### **Arkhangelsk Officials Call Incident 'Provocation'**

*LD1410215692 Moscow ITAR-TASS in English  
1925 GMT 14 Oct 92*

[By ITAR-TASS correspondent Vladimir Anufriyev]

[Text] Arkhangelsk, October 14 (TASS)—Anatoliy Bonnikov, the mayor of Arkhangelsk City, today officially recalled his invitation to the international ecological "Greenpeace" movement to visit this northern port of Russia. Bonnikov announced this decision during a press conference in the evening. The Greenpeace ship "Solo" was expected to arrive in Arkhangelsk after its action in Novaya Zemlya Archipelago.

Pavel Balakshin, the head of the administration of the Arkhangelsk province, at the same press conference described the "Greenpeace" activists' action in the Russian territorial waters near Novaya Zemlya Archipelago as a provocation.

"Noble aims should be achieved through a civilized way, and not by arbitrary methods," the head of the region's executive authority said, of which Novaya Zemlya also forms a part.

According to Balakshin, the international conference on ecological problems of the Arctic and prospects of nuclear disarmament, which opens on Thursday in Arkhangelsk should become such a civilized breakthrough to the Archipelago's secrets.

Leading nuclear scientists, military officers and their opponents—ecologists, doctors and social workers from Russia, the U.S.A., Canada, Norway and other countries will take part in the conference's work.

### **Second Ship Violates Territorial Waters**

*LD1510064392 Moscow ITAR-TASS in English  
0631 GMT 15 Oct 92*

[By ITAR-TASS correspondent Vladimir Popov]

[Text] Vladivostok, October 15 (TASS)—Another Greenpeace ship violated the rules of navigation in Russian territorial waters, however the incident ended only with a warning in contrast to the Greenpeace "Solo" ship which was detained for violating Russian territorial waters.

The "Rainbow Warrior" belonging to the environmental organisation sailed from the Russian Far Eastern port of Vladivostok, but did not follow the recommended route. It deviated from it several times and sailed to the Bay of Strelki.

After ecologists took all the necessary measurements there, the vessel left the bay and drifted for several hours in Russian territorial waters, which was not envisaged by the agreement.

After that the "Rainbow Warrior" sailed toward the port of Nakhodka and again deviated from the recommended route.

The captain of the ship will be warned against violating the rules of navigation and sailing in Russian territorial waters, deputy head of the Pacific naval border guard district Yuri Rasskazchikov told TASS on Thursday.

If the violations continue the "Rainbow Warrior" will be detained, he added.

It is the first official visit of a Greenpeace ship to the Russian Far East.

The "Solo" ship which was heading to the nuclear test site at Novaya Zemlya in the Russian Arctic Zone was detained by border guards for violating Russian territorial waters. The ship is being towed to a Russian northern port and the captain may face criminal charges.

#### Foreign Ministry Comments

OW1610162892 Moscow INTERFAX in English  
1539 GMT 16 Oct 92

[Report by diplomatic correspondents A. Borodin, D. Voskoboinikov, I. Porshnev and others—item transmitted via KYODO]

[Text] Russia's Foreign Ministry has issued a commentary in connection with the situation concerning the ship "Solo" which belongs to the international environmentalist organization Greenpeace. It's common knowledge that several days ago the vessel was detained when trying to enter Russia's territorial waters outside the island of Novaya Zemlya. The vessel violated Russia's border deliberately, the director of the ministry's department for information and the press Sergey Yastrzembksi said at a briefing.

According to him, it's out of the question that the ship was engaged in a peaceful mission, since water and soil samples have been discovered on its board. This means that members of its crew were conducting research in Russia's territorial waters, which is a violation of international legislation, since requests for the permission to carry out such work should be filed in advance. Russia's Foreign Ministry received no such requests.

#### Komsomolets Nuclear Torpedoes May Poison Arctic Sea

LD0910155292 Moscow Teleradiokompaniya  
Ostankino Television First Program Network  
in Russian 2044 GMT 8 Oct 92

[From the "Novosti" newscast]

[Text] The "Behind Seven Seals" section of MILITARY REVIEW discussed the problem of the Komsomolets nuclear submarine which sank in the Norwegian Sea on 7 April, 1989.

Over video of inspection of a sunken vessel the presenter says: This is not the first nuclear submarine whose final resting place is the seabed but specialists note that this is the first whose nuclear reactor has already begun to leak. This leakage of radio-nuclei's into the water is virtually harmless from the ecological point of view.

But it is known that apart from the reactor, the sunken submarine contains two torpedoes with nuclear warheads armed with plutonium.

Tengiz Borisov, vice president of the League of Independent Scientists comments: If the several kilograms of plutonium contained in the warheads gets into the water

fishing will be impossible in this region for 600-700 years, in virtually the whole sea. Quite an extensive leakage of radio nuclides into the water can be expected in 1995 or in 1996 at the latest.

The alloys from which the submarine was constructed are decomposing on the sea bed. The presenter concludes: The main question is how to prevent a disaster. It must be done in time. For scientists say that there is only eighteen months left before a major leakage of plutonium could occur.

#### Navy Official on Condition of Abandoned Nuclear Subs

OW1010005692 Moscow INTERFAX in English  
1725 GMT 9 Oct 92

[Following item transmitted via KYODO]

[Text] The accident rate in the Russian Navy has decreased by at least 300-400 percent and, according to some indications, as much as 600 percent in comparison with the level of the past six years. This was reported to INTERFAX by chief navigator of the Russian Navy Rear Admiral Valeriy Aleksin, who attributed the good results to the enactment of a new system for the notification of the accident rate of ships.

According to his information, in the first six months of 1992 only two accidents occurred in the Russian Navy. Petty Officer V. Andruk died in a fire on the Pacific Ocean Fleet's anti-submarine craft "Admiral Zakharov" in February; and in May an electric compressor exploded on a Northern Fleet atomic submarine, taking the life of Captain Konstantin Lyashkov.

Aleksin noted that today 3 Soviet and 2 American atomic submarines lay sunken on the bottom of the ocean with nuclear weapons on board. The rear admiral said their atomic reactors are constructed in such a way that they cannot explode. The worst that could happen is a meltdown of their active zones. But so far this has not occurred.

#### Commission To Ensure Safe Burial of Radioactive Wastes

LD1210173292 Moscow Radio Rossii Network  
in Russian 1300 GMT 12 Oct 92

[Text] A commission for ensuring the safe burial of radioactive wastes has been set up in Russia. An instruction to that effect has been signed in the government. The Commission's chairman, Vice President of the Russian Academy of Sciences Nikolay Laverov, stated in a conversation with a TASS correspondent that the commission's specialists will conduct fundamentally new research and also select plots that are suitable for burial.

On the whole the burial of radioactive wastes will be effected by introducing them into a solid mass as this method is the safest. Scientists are now developing a compound of minerals that would be capable of encasing [vosprinimat] radioactive substances and reliably storing them for no less than 150,000 years.

**Greenpeace Assesses Nuclear Waste in Kara Sea****Details Dumping Sites**

AU1910150492 Frankfurt/Main FRANKFURTER  
ALLGEMEINE in German 19 Oct 92 p 1

[Report by "rieb": "Former Soviet Union Dumped Nuclear Waste in Sea"]

[Text] Frankfurt, 18 October—The former Soviet Union apparently dumped huge quantities of nuclear waste and even reactors with fuel rods in the sea. According to the Greenpeace ecological organization, there are 17,000 barrels and containers with radioactive waste in the Kara Sea in the Arctic near the Novaya Zemlya string of islands. In addition, 15 nuclear submarines were sunk there, some of which still have fuel rods in their reactors, Greenpeace nuclear expert Laing told this newspaper. He added that the Kara Sea is "the world's largest nuclear dumping place." Laing said that he had his information from Russian military officials. In February 1992, Aleksandr Emelyanekov, a former Supreme Soviet deputy, officially asked the Russian Government how much nuclear material was disposed of in the Kara Sea. The government admitted that 12 nuclear submarines were sunk in the Kara Sea, and it also confirmed the figures on the barrels dumped there. There was the danger, said Laing, that plants and fish in the Kara Sea and in adjacent waters would be radioactively polluted.

**Seeks Independent Investigation**

OW2110212092 Moscow INTERFAX in English  
1928 GMT 21 Oct 92

[Following item transmitted via KYODO]

[Text] The International ecological organization Greenpeace urges all participants in the London Convention banning the burial of nuclear waste in seas to request the Russian government to allow a complete independent investigation of the places where nuclear waste had been buried in the Kara Sea.

The organization would like the Russian government to guarantee that nuclear waste be never thrown in seas. This was said in a press report issued by the Greenpeace Moscow representation Wednesday.

The head of the representation John Sprange said that a meeting of the London convention participants in November will focus on a draft full ban on the burial of radioactive waste in seas.

As IF [INTERFAX] reported earlier, the Greenpeace "Solo" vessel detained by Russian border guards has already been released and is moving toward Norway.

**Novaya Zemlya Test Site Given 'Satisfactory' Ecological Ratings****Parliamentary Group Inspects Area**

OW1310150992 Moscow INTERFAX in English  
1429 GMT 13 Oct 92

[Following item transmitted via KYODO]

[Text] The 87 atmospheric and 3 underwater nuclear tests carried out from 1955 till 1962 largely accounted for nuclear contamination in the region of the Novaya Zemlya testing ground. The 42 underwater nuclear tests, carried out from 1964 to the 1990s did not cause the radiological situation to deteriorate seriously. This information was revealed on Tuesday by Valeriy Menshikov, Vice-Chairman of the Russian parliament's Committee for Ecology and Natural Resources who led the parliamentary group which visited Novaya Zemlya on October 6 to 8.

He said that the radiation situation is mostly favorable in the region and that the radiation levels were even lower than in Moscow - 9 to 17 micro-RAD. However, this conclusion does not refer to three areas with higher radiation levels. Menshikov said that the final conclusions will be made following a comprehensive ecological analysis.

According to "unofficial information concerning the place where radioactive wastes are buried", it is within the 12-mile zone, which means that it is within the limits of the Russian border. He noted at the same time that to this day the dumping of nuclear wastes in the Kara and Barents seas are not controlled.

"The most painful problem is the need to carry out ecological checks in the Yamal Peninsula and in the Yamal-Nenets autonomous district," he said.

Menshikov noted, answering INTERFAX's question, that the Novaya Zemlya archipelago and the adjacent regions cannot be automatically put on a par with the regions affected by Chernobyl and that the ecological programme will not apply to them.

Secretary of the parliamentary Committee for Defence and Security Valeriy Shuikov announced during the press conference that on October 28 the parliament will hold hearings on nuclear tests. The MPs intend to send an inquiry to the government, requesting exhaustive information on the radiation levels in the Novaya Zemlya region.

The speakers stated that during the next nine months, Russia will not carry out nuclear tests in Novaya Zemlya. The future of nuclear tests, they said, will depend on joint decisions to be taken by the three major nuclear powers - the U.S., France and Russia.

### Arctic Ecology Conference Backs Conclusions

OW2210172292 Moscow INTERFAX in English  
1433 GMT 22 Oct 92

[Following item transmitted via KYODO]

[Text] The level of radioactive contamination in the area of the Novaya Zemlya nuclear testing ground is not nearly as high as that in the areas where nuclear weapons are manufactured, such as the Southern Urals or the Chelyabinsk-40 zone. Such was the conclusion made by scientists from the U.S.A., Norway, France, Russia, Ukraine, and some other countries who attended an international conference on the ecological problems of the Arctic and prospects for nuclear disarmament held in Archangel on October 15-17.

Valeriy Menshikov, one of the conference organizers and Deputy Chairman of the Ecology Committee of the Russian Supreme Soviet, told INTERFAX the detailed aerial maps of Novaya Zemlya prove the conclusion of a parliamentary commission which visited the archipelago early this month that the area's ecological condition is nearly satisfactory.

At the same time, Menshikov supported the Supreme Soviet's position, which refused to make the final conclusions before the government disclosed its information on nuclear waste dumps in Novaya Zemlya. The government is to reply to the Supreme Soviet's relevant inquiry before November 6, 1992.

### WESTERN REGION

#### Authorities Said To Neglect Needs of Chernobyl Victims

93UN0009A Moscow TRUD in Russian 1 Oct 92 p 2

[Article by TRUD staff correspondent, a participant of the Chernobyl disaster cleanup operations, Stanislav Prokopchuk, under the "Echo of Chernobyl" rubric: "Well-Calculated Love"]

[Text] Kiev—Mineralnyye Vody—Crimea—As I was watching Anatoliy Melevskiy, with his powerful frame and bearlike gait, I could hardly believe that this previously well-known wrestler was now disabled and seriously sick. Just as sick were dozens of these "vacationers" in the Dubovaya Roshcha sanatorium in Zheleznovodsk, who looked either glum and subdued or tense and easily upset.

They felt alien to these luxurious rooms, with their crystal chandeliers, to the fabulous lobbies and their foreign-made armchairs, to these offices, immaculate to the extreme, where they were attended to by a very professional and obligingly polite staff, people who had been well drilled and had become used to contacts with the highest government officials of our former party and command system. This system had criminally deceived tens of thousands of reserve soldiers; it had dressed them in green uniforms and plunged them into the very crucible of the Chernobyl catastrophe, thus turning them

into live stalker-robots. This happened because no means of protection were provided for them; their lives were not insured, but the system remained hypocritically silent about what was in store for them soon after their careless embrace of radioactive chunks of graphite.

"This year alone, we have already buried eight of those people who were with us," said Melevskiy. "They were all diagnosed the same—with leukosis."

It was mere chance that Anatoliy Melevskiy and Vladimir Voynov, from Coal Mine imeni Artyem in Lugansk, my tablemates in the sanatorium cafeteria, had exchanged their workers' overalls for the military uniform in May of 1986, and almost at once they found themselves on a kind of a death row as they used ordinary shovels or sometimes their bare hands to dump the trash, glowing with hundreds of roentgens, off the third unit roof.

The ordeals that they went through later also left their mark on these people: Many a door they had to knock on trying to prove that they were not faking being sick, that their disease was not "vegetovascular dystonia"—the diagnosis mass-produced for almost all of the "liquidators"—but that it was radiation sickness. Only because they were so insistent were they recognized as Chernobyl victims and through some miracle came here for treatment.

It was purely by chance that they had managed to get here: In 1990, together with some other elite health care institutions, the Dubovaya Roshcha was allegedly reoriented for treatment of Chernobyl victims only; this was done very publicly and with a lot of pomp. I say "allegedly" because the advertised reorientation of some of the sanatoria that belonged to the Central Committee or to the USSR Ministry of Health Fourth administration was only a cheap populist gesture, a political trick of the former CPSU Central Committee leaders. The share of liquidators among the guests of the Dubovaya Roshcha, as well as of the Pyatigorsk Sanatorium imeni Kirov next door, did not exceed one-fourth of the total. Only 20 beds a month were assigned for all the Ukrainian Chernobyl victims in the Central Committee's Aydanil in the Crimea.

Before the collapse of the former Union, some of the victims, if they were lucky, were treated in the above-mentioned sanatoria, which were taken away from the CPSU Central Committee and the USSR Ministry of Health Fourth Administration and handed over to the department of the former Union Ministry of Health that was especially set up for such institutions. But most of the victims have been and still are treated in central rayon hospitals, oblast special radiation protection clinics, and in radiology centers. Speaking of Ukraine, it has a major scientific center of radiation medicine functioning there. Some of trade union hospitals have also opened 10 specialized departments with 580 beds in them. But their possibilities are quite limited. In the five years of their existence, less than a mere one-third of all extreme cases have gone through their recovery and rehabilitation therapy...



The further away we move from the tragic events of the spring and summer of 1986, the easier it becomes to see what we would not want to see at all: With every year, the problems of Chernobyl, like the hull of an ocean liner, get more and more corroded with all the demagoguery, political speculations, greediness, and theft. All this is happening while the people from the affected areas suffer an increasing number of oncologic and cardiac, thyroid and immune system diseases, while the mortality rate among the liquidators has proved to be several times higher than the republic average. The Chernobyl legislation, wonderful in its nature, has proved to be "below the poverty level," and therefore many of its articles get hopelessly frozen.

Literally on the eve of the sixth anniversary of the disaster, the Ukrainian Government halved its allocations for the enforcement of Chernobyl programs. On one hand, this was caused by the collapse of the USSR; the other reason was our economic crisis, which sharply reduced all revenues to the republic budget. Its deficit equals some 20 billion.

But the recovery and rehabilitation treatment of the victims can be improved even with this considerable hole in the budget. How? Through the concentration of all the Chernobyl funds and tightening the control over their spending.

Sixteen of our ministries and agencies are involved in the Chernobyl victims treatment. MinChernobyl has been requested to coordinate all these efforts. At present this coordination is limited to distributing the money among the agencies and oblasts and supervising how they spend it. But the main problem is the construction of new housing for the victims and their relocation, as well as finding solutions for most difficult problems of the 30-kilometer zone. It would be a shame to extend any special demands to MinChernobyl with respect to any treatment for the victims as long as it remains an agency without its own health care resources.

But who in Ukraine is responsible for providing aid for recovery and rehabilitation? Everybody is, in some measure, and this means nobody. Meanwhile, the Ministry of Health owns tens of special departments and rehabilitation centers and several clinics. Any victim that needs medical help finds himself in the position of an Indian with too many chiefs.

"What we need is to set up a well-defined and strict system for the medical observation and treatment of the Chernobyl victims," believes N. Lukyanov, Central Committee chairman of the medical workers union. "It should be similar, for instance, to the one that we have for the people with tuberculosis or with dermatological and venereal diseases. In other words, specific persons should be appointed to our clinics who will be responsible for Chernobyl patients."

A. Kostenko, leader of the expert group for Chernobyl problems of the FNPU [Federation of Independent

Trade Unions of Ukraine] Council, supports N. Lukyanov's idea about the necessity of setting up a well-defined system for the medical observation and insurance of the "liquidators." He also thinks that no new structures need to be established, to ensure more economical spending and concentration of funds for Chernobyl victims. We simply need to redirect our smoothly working system of treating patients that was tested within the framework of the fourth administration to service the Chernobyl patients.

Being specific and talking about Ukraine, this kind of experience may be found and applied to the liquidators within the framework of the same structure bearing a different sign—"Health care association under the Ukrainian Cabinet of Ministers Administration of Affairs." The association keeps records of several thousand patients, including managers of major enterprises, people's deputies, People's and Honored Artists, heads of ministries and agencies. A considerable number among all those is made up of the people who helped build the "sarcophagus," who were working to decontaminate the Chernobyl site, and who were helping to evacuate tens of thousands of Pripyat and Chernobyl residents.

"Why shouldn't we," speculates Anatoliy Ivanovich Kostenko, "hand over all of the 140,000 liquidators to this very well-run structure, which has branches in every oblast? Didn't the majority of these people render just as much service to their country?"

But will the people who are in real power over things that have remained unchanged and who have replaced only the sign agree to do this? If they do, maybe there is no need then to hand over to MinChernobyl some of the former CPSU and fourth administration health care facilities "for treatment there, free of charge and paid for from the state budget, of thousands of liquidators and other victims," which is what the MinChernobyl Minister G. Gotovchits is trying to obtain from the Ukrainian president and Cabinet of Ministers. Georgiy Aleksandrovich thinks that the number of treated patients may increase considerably in this way, even within the constraints of the same allocations, because under the current conditions it is still cheaper to own sanatoria than to purchase treatment courses in them from various agencies...

Today, however, thousands of fake well-wishers are descending on the Chernobyl sufferers as wasps come to honey. Their "love" for the people to whom the country is belatedly paying its debt is definitely well calculated. Dozens of unions, societies, and associations have been hiding under the magic "Chernobyl" sign, which can open the door to preferential taxation, free access to any goods that are in high demand, or to Western aid. Under the guise of charity, they are involved in unabashed trading, speculation, or in criminal business activities. The "Union of Chernobyl Workers," for instance, (the procurator's office recently started investigating it) went so far as to print liquidator certificates and even to distribute several thousand of them.



Every time I meet with my liquidator friends, we remember the classic example of the Kremlin subbotnik [day of voluntary unpaid labor] and the log that by now hundreds of people have already helped Lenin to carry. The further away we move from the tragic days of the disaster, the more people are claiming their right to the "paper" allowing them special benefits, including free medical treatment. A terrifying figure was mentioned recently in one of the republic newspapers—3.5 million people have already demanded the Ukrainian certificate identifying its owner as a victim and a participant in the disaster aftermath cleanup (such papers will soon be issued). Will justice prevail and will the 650,000 real liquidators known in the entire former USSR in 1987 shake off the millions of fake victims who have clamped like leeches onto the people that did not hesitate to plunge in the radioactive inferno?

One cannot but quote the very true words of Mikhail Ivanovich Sheval, chairman of the Kiev Oblast trade union council, who had been in the 30-kilometer zone from the very first days of the disaster:

"The sooner we shed all the fake victims and all those who are making money on the suffering and grieving of the true liquidators, the more money will remain for their treatment and for the creation of a strict state system for their protection."

I wonder, where will my Dubovaya Roshcha friends, disabled by Chernobyl—A. Melevskiy from Minsk and Donbass coal miner V. Voynov—be getting their treatment this year? In the Crimea or in the Caucasus? Are they trying their best again to obtain the authorization for another treatment course? I feel convinced of just one thing: They have very few chances of ever coming again to the "pearl of Zheleznovodsk." Dubovaya Roshcha has been once again completely taken over by the people whose privileges remain unshakeable and who owned it until the change of hands that occurred on paper last year. By the ruling elite and their relations.

#### **German Firms Compete for Contract on Chernobyl Replacement**

AU1310125892 Kiev URYADOVYY KURYER  
in Ukrainian 2 Oct 92 p 11

[Information issued by Ukraine's Prime Minister's Press Service: "What Can Replace the Chernobyl Atomic Electric Power Plant?"]

[Text] As reported by Ukraine's Ministry of Energy and Electrification, a thermal electric power plant equipped with the most advanced steam-gas installations will be built in Chyhyryn [town in Cherkasy Oblast]. Its capacity will be almost two million kilowatts. It will replace the energy units of the Chernobyl Atomic Electric Power Plant.

The West German firms Siemens and ABB [Asea Brown Boveri] are competing for the right to build the plant.

#### **Officials Allegedly Reluctant To Close Down Chernobyl Plant**

AU1310133592 Kiev HOLOS UKRAYINY in Ukrainian  
6 Oct 92 p 7

[Commentary by Leonid Hashyn: "Parliamentarians Will Regulate?"]

[Text] It is known from official sources that, after the explosion of the reactor at the Chernobyl Atomic Electric Power Plant, 96 percent of the nuclear fuel remained within the energy unit. However, so far, not more than a quarter of the entire fuel has been found in the "Ukryttya" [shelter] facility. As for the rest of this fuel, it either escaped from the reactor or remains in those places that have not yet been able to be reached by the investigators of the "sarcophagus."

This was reported by Ukraine's People's Deputy V. Usatenko at a meeting of the Supreme Council Standing Commission for Questions of the Chernobyl Catastrophe. The deputy recently acquainted himself with the situation at the "Ukryttya" facility. Speaking about systems of control over nuclear fuel, he drew attention to the fact that the readings of these systems are sometimes appreciably different. Nor do the results of measurements of the movements of fragments inside the "sarcophagus" match, results that were made by specialists from the Ukrainian Geological Committee and by members of the former Comprehensive Team, following the 1990 earthquake.

There also are organizational problems on top of the strictly technical ones. For example, the Cabinet of Ministers has not yet appointed a juridical person who would be answerable for the state of the "Ukryttya" facility. This is very alarming.

V. Usatenko also spoke about the progress of work aimed at preparing the Chernobyl Atomic Electric Power Plant for closure. In his opinion, the administration of the plant does not seem to be in a hurry to do this. For some reason, the boilers for an emergency boiler house and an additional four boiler cars [kotlovahony] are still being stored as far away as in Slavutych. If there is no boiler house by summer, it will not be possible to halt the Chernobyl Atomic Electric Power Plant. Then, perhaps, the operating plant will be "caught" in the winter of 1993-94. Such a cold period of the year is not the time to be giving up energy.

M. Umanets, president of the "Ukratomenerhoprom" concern, is not playing hide-and-seek. He offers quite a few arguments in favor of the Chernobyl Atomic Electric Power Plant's operation until the full exhaustion of its potential. It is true, though, that V. Usatenko only mentioned one of them: The Chernobyl zone is also a security measure, because it may absorb radioactive emissions before they reach the population.

After a comparison was made between the nongovernmental atomic concern and the State Atomic Supervision Commission, which is within the government (and

also in the government's pocket: for example, an inspector's salary is about one tenth of that of his "subordinates" at the Chernobyl Atomic Electric Power Plant), it was proposed that the commission's controlling function be intensified. It was also proposed that the functions of the commission be expanded and that the question of legal regulation in atomic power engineering also be dealt with. However, even before, the commission did not restrict its activity to resolving Chernobyl problems alone. It is precisely this commission that is currently studying bills on the utilization of atomic energy, as well as those on handling radioactive substances....

It is not that the deputies have already resolved all the Chernobyl problems and have nothing else to do. It is a different matter. We should not, while overcoming the consequences of a great radiation disaster, allow new "Chernobyls" to grow up elsewhere.

#### **Ukraine UN Envoy Addresses General Assembly on Chernobyl**

*LD2110122192 Moscow ITAR-TASS in English  
0937 GMT 21 Oct 92*

[By ITAR-TASS correspondent Boris Sitnikov]

[Text] United Nations, October 21 (TASS)—"Ukraine plans to join the non-proliferation treaty shortly and to place its nuclear power plants and fissionable materials under the control of the International Atomic Agency," Ukrainian delegate V. Yelchenko told the special political committee of the United Nations General Assembly on Tuesday. He was reporting on the consequences of the Chernobyl accident.

"The Ukrainian people have learned from their own experience the danger with which the unqualified handling of nuclear energy for peaceful purposes is fraught," he said. "The number of people affected by the Chernobyl disaster is steadily growing due to the natural migration of radioactive particles from the contaminated territory." Expert forecasts show that their number may reach 35 millions within the next few years. "We believe," Yelchenko stressed, "that the complexity and diversity of the problems raised by the Chernobyl accident necessitates the United Nations' more tangible participation in their solution."

#### **International Seminar on Nuclear Accidents Held in Kiev**

*WS1910133692 Kiev BUSINESS UKRAYINA  
in Ukrainian No 39, Oct 92 p 2*

[Text] An international seminar devoted to accidents at nuclear power stations was held 29 September through 2 October in Pushcha-Voditsa, near Kiev. It is this type of accident that occurred in April, 1986, in Chernobyl. This fact influenced the selection of the venue for the conference which was organized by the Ukrainian State Nuclear Board, the French Nuclear Association, and the Ukrainian Nuclear Energy Office. Specialists from Germany, Russia, Finland, Czechoslovakia, and some other European countries also took part in the conference.

"The idea of such a conference came from the Ukrainian side," said Georgiy Kopchynskiy, first deputy director of the Ukrainian State Nuclear Board. "France has accumulated great experience in the use of nuclear energy, which will be useful for our specialists. The objective of the conference is the prevention of nuclear plant accidents as well as the study of security issues based on emergency cases of RBMK and VVR [acronyms unknown] types of reactors. On their visit to Chernobyl, the participants acquainted themselves with the progress of work aimed at the closure of all units in 1993 and directed by the Supreme Council and the Ukrainian Government."

"We, in turn, are interested in the experience of Ukrainian atomic specialists in the liquidation of the consequences of the Chernobyl melt-down," adds the chief nuclear security inspector from Electricite de France, Pierre Tanguy, the leader of the French delegation. "This kind of accident is just impossible in France, and nuclear power engineering enjoys everyone's confidence. At present, our 55 nuclear power stations produce three-fourths of the electricity consumed in the entire country. We keep improving the power plant equipment and are working together with German specialists on new-generation reactors."

Michelle Otrique, branch director of Isfakhan Company of France, cited an interesting fact.

"A week before my trip to Ukraine, I watched the program about Chernobyl on French television," he said. "My friends and I wanted to get a "backyard" look at its creation. And what would you think? It turned out that it had been filmed someplace in Kazakhstan. Different kinds of horrors that never occurred in Ukraine were shown. We need true, reliable information about what measures are taken to ensure security at the nuclear power plants, what are the future prospects for this very important industry, what new experience has been accumulated by the world."

#### **Official Comments on Radiation Safety Controls**

*LD1210171892 Kiev Radio Ukraine World Service  
in Ukrainian 1900 GMT 11 Oct 92*

[Text] There are currently more than 200,000 sources of radioactive emissions in Ukraine and they are all subject to strict control, according to Kopchynskyy, first deputy chairman of the Ukrainian State Committee for Nuclear and Radiation Safety. Regarding the safety problem, in particular concerning the reactor at the Nuclear Research Institute at the Academy of Sciences of Ukraine in Kiev, Kopchynskyy noted that this reactor bears no resemblance whatsoever to the one at Chernobyl. That type of accident simply cannot happen there, although it is undoubtedly necessary to maintain control over the reactor.

As far as the burial ground at Pirogovo is concerned, in Kopchynskyy's opinion the depository was built with out-of-date technology and it is already time to think about building a new one.

## CAUCASUS/CENTRAL ASIA

### Kazakhstan's Atyrau Oblast Closes Military Testing Grounds

PM1510092392 Moscow IZVESTIYA in Russian  
14 Oct 92 Morning Edition p 2

[Oleg Stefashin report: "Military Testing Ground Being Closed"]

[Text] Kazakhstan—Atyrau Oblast Administration Head S. Tugelbayev has closed all military testing grounds on oblast territory, which hitherto were under Russian jurisdiction.

He attributed his decision to the fact that in the last 10 years the military has, in practice, taken more than 1 million hectares of land out of cultivation and seriously aggravated the ecological situation in the region.

Military unit commanders must vacate and put in order the territories used by them by year's end. They will be allowed to undertake scientific and research work on the testing grounds, but without the use of arms.

## BALTIC STATES

### Baltic States' Environmental Laws Surveyed

#### Estonia

93WN0040A Riga THE BALTIC OBSERVER  
in English 17-23 Sep 92 p 2

[Article by Ildar Nizemetdinov]

#### [Excerpt] Environmental Legislation

While the Estonian parliamentarians gear up for elections, we will take the opportunity to survey the country's environmental protection legislation. A number of deputies entered politics riding the wave of the environmental movement. As is well known, the Estonian "singing revolution" began with a battle against ministries which wanted to start phosphorous mining in Estonia.

The law *On Environmental Protection in Estonia*, which came into effect on March 15, 1990, determines the responsibilities of the Supreme Council, national government and local government bodies concerning nature protection.

The Supreme Council formulates the general environmental protection policy of the country and the directions of ecological activity. Local governments conclude contracts for the use of natural resources and organize the protection of landscapes and ecosystems. According to the law, the state must protect unique environmental areas, endangered species, and territories of special scientific or aesthetic value.

The law determines conditions for using land, soil, and different bodies of water. A special section of the law provides for monitoring the quality of the environment.

The law declares that information on nature protection must be accessible, and that state bodies must inform the

population about accidents causing environmental pollution. Every citizen has a right to receive information about projects, plans and activities having an influence on his or her ecological surroundings.

The law also defines administrative and criminal liabilities for the violation of environmental protection laws. Finally, the law states that if Estonian law differs from international law, Estonia will observe the law which has the strictest requirements.

In March 1991, a special law about the National Park of Lahemaa, one of the most interesting nature complexes in Estonia, was passed. The law protects the land, islands and water located there, permitting only scientific activities on this territory.

Special taxes are levied in Estonia for using mineral building materials, peat, oil, and water. Other taxes apply for pollution, waste storage and logging. The tax system is designed as an economic incentive against pollution. A permit from the Ministry of the Environment is necessary to use natural resources for a profit.

In May 1991, the Estonian Supreme Council passed a resolution *On the Chief Inspector of Environmental Protection in the Republic of Estonia*. The Chief Inspector is appointed by the Supreme Council for a seven-year term. This official is empowered to stop pollution exceeding norms or other activities harmful to nature. The inspector can even block resolutions of ministries and local government bodies which do not observe norms on environmental protection and resource utilization.

Although the normative basis for environmental protection in Estonia is quite thorough, the country lacks the necessary resources for building waste treatment facilities.

#### Latvia

93WN0040B Riga THE BALTIC OBSERVER  
in English 17-23 Sep 92 p 2

[Article by Ilze Arklina]

#### [Excerpt] Laws on Nature

Nature protection organizations and legislation were analogous to that of the USSR during the period from 1945 to 1990. Beginning in 1990, the SC of the Republic of Latvia and the Latvia Council of Ministers passed several normative acts regulating the use of natural resources: *On the Environmental Protection Committee of the Republic of Latvia*, *On Environmental Protection*, *On State Environmental Impact Assessments*, *On Natural Resources Taxes*, and *On Environmental Committee Inspectorate Regulation*.

The law *On the Environmental Protection Committee of the Republic of Latvia*, passed on June 20, 1990, states that the Environmental Protection Committee (EPC) is Latvia's executive and oversight organ for all questions deemed to be within its competence regarding environmental protection and use of natural resources.

The EPC is subordinated to the Supreme Council and is charged with formulating and implementing a unified policy for environmental protection and resource use together with government agencies; performing state environmental impact assessments and establishing environmental protection requirements, overseeing environmental protection and natural resource use throughout the nation's territory, the continental shelf, and the area of the Baltic Sea which is in the Latvian economic zone.

The law *On Environmental Protection*, passed on August 6, 1991, aims to ensure a favorable environment for present and future generations, harmonize ecological and economic interests, unify territorial, national and international environmental protection and conservation interests, implement scientific and technical knowledge in the protection of the environment, ensure complete and open information about the state of the environment, further the observance of environmental protection legislation and to establish accountability for violations of environmental laws.

The goals of the law *On Natural Resource Taxes*, passed on December 12, 1990, are to limit pollution and the wasteful use of natural resources, and to collect funds for environmental protection endeavors. The taxes are derived from charges for the use of natural resources, payments for the release of effluents into the atmosphere within normative limits, and sanctions for effluent releases and resource use exceeding limits.

### Lithuania

93WN0040C Riga THE BALTIC OBSERVER  
in English 17-23 Sep 92 p 2

[Article by Angela M. Crooks]

[Excerpt] Overview of Environmental Protection Law in Lithuania

The value of natural resources was not taken into account under the Soviet planned economy. Instead, the "cost" of a product was determined by the amount of labor used in manufacturing it, and there was no incentive for conservation. Every region of the former Soviet Union now faces environmental problems as a result of the reckless exploitation of nature, and the Baltic states are no exception. Consequently, the new governments of Latvia, Lithuania and Estonia are trying to build effective environmental protection mechanisms and have passed various laws regulating the environment.

The "constitution" of ecological laws in Lithuania, adopted on January 12, 1992, is the *Law on Environmental Protection*. This law sets forth the guiding principles of environmental policy, defining the rights and responsibilities of the government, enterprises and individuals. Based on this law, separate resolutions and normative acts have been adopted to regulate the imposition of fines for pollution and to define standards for the quality of the air, water, land and so forth.

There are three themes which can be found in the law: 1) residents of Lithuania have the right to a safe and healthy environment; 2) the development of society should be in harmony with nature; and 3) laws should preserve the biological diversity of living organisms as well as the food chain which is necessary for sustaining them. Natural resources must be used rationally, and complete and accurate information on the environment must be available.

Ecology is regulated by the Department of Environmental Protection (subordinate to the Supreme Council), the government, and by local authorities.

Part of the state budget is allocated for environmental protection, with outside resources being directed to a special government ecological fund.

Incentives for clean production and penalties for exceeding maximum levels of pollution are outlined by various normative acts and laws.

Enterprises must undergo environmental impact assessments before they can receive permission for operation. Permits are required for building, reconstruction and demolition. The use of natural resources and the disposal of wastes are also regulated by permits.

The production or transport of hazardous chemical substances is permitted only upon government inspection and approval. Nuclear, chemical, and biological weapons are prohibited on the territory of Lithuania.

The *Law on Environmental Protection* defines conditions for declaring an ecological disaster zone and provides civil defense measures in the event of a man-made or natural catastrophe. If an ecological disaster results from economic activity, the guilty party must remove the sources of damage, eliminate negative consequences, take all necessary measures to restore order, and inform the population, the Lithuanian government, the Ministry of Health, and the Environmental Protection Committee.

### Finnish Firms Sign Contract for Tallinn Sewage Treatment Project

92WN0814B Helsinki HELSINGIN SANOMAT  
in Finnish 25 Sep 92 p B 11

[Unattributed report: "YIT Receives Sewage Treatment Facility Contract From Tallinn"]

[Text] On Thursday [24 September], the YIT Consortium signed an 11.5-million-markka contract for a sewage treatment facility in Tallinn. At issue is the first stage of expansion of a chemical sewage treatment facility. The job will be finished in about a year. The entire expansion project is supposed to be done by the end of 1997.

Finland is selling the main equipment below cost. A significant number of subcontractors are Estonian. Expansion of Tallinn's sewage treatment facility is one of the major environmental projects in the Baltic region. It is the first water pollution control project implemented



by an international team in the region. Finland's Ministry of Environment is paying for Finnish firms' contribution to the sewage treatment facility.

### **Authorities Warn Estonian Radioactive Waste May Enter Gulf of Finland**

92WN0793A Helsinki HELSINGIN SANOMAT  
in Finnish 4 Sep 92 p 20

[Article by Riitta Vainio: "Radioactive Uranium Lake Floods Coast of Estonia; Officials: Radioactive Materials Flow Into Sea Through Groundwater"]

[Text] Estonian experts think that the embankment of the waste basin for the former uranium ore concentration plant in Sillamäki, located in Estonia on the shore of the Gulf of Finland, may burst. In that event, low and mid-level radioactive industrial waste would flow into the Gulf of Finland.

The surface of the waste lake has risen close to the rim of the embankment. According to Estonian officials, radioactive materials are already getting into the Gulf of Finland through the groundwater.

According to the Russian management of the Sillamäki plant, experts from St. Petersburg have examined the embankment and they assert that it will hold. According to them, they plan to isolate the waste lake from the environment by reinforcing the embankment and covering the waste area.

Enn Loigu, the head of the Inland Waters Department of the Technical College of Tallinn, estimated on Thursday [3 September] that the danger of the embankment's collapsing is not very great. He thought that the embankment might collapse if there is continuous, abundant rainfall.

Radiation Safety Center investigators are leaving for Sillamäki for a couple of weeks to take samples of coastal water radioactivity and also samples of algae, among other things.

The results on the radioactivity of the water and sea bottom samples taken earlier this summer from the sea offshore of Sillamäki are not yet ready. No sample values diverging from the norms were noted outside of the coastal waters in the Gulf of Finland.

### **About 1,200 Tons of Concentration Waste Right on Coast**

Uranium was chemically concentrated in Sillamäki over a period of several decades. Mixed with ashes, the solid and liquid waste produced during concentration of the ore was pumped into a pond located about 20 meters from the shore of the Gulf of Finland. About 1,200 tons of uranium waste and, in addition, chemical substances hazardous to the environment were dumped into the lake.

There is an earth embankment around the lake 10 meters wide and about 20 meters high on the Gulf of Finland side.

Special investigator Laila Salonen of the Radiation Safety Center visited Sillamäki in June. According to her, the Russian management of the Sillamäki plant is convinced that the earth embankment will hold.

According to Enn Loigu, it is clear that radioactive materials are getting into the groundwater and the Gulf of Finland from the basin. According to foreign investigators, a lot of nitrogen is also coming from the area. The Estonians themselves have not been able to investigate the situation because Sillamäki has been a closed Russian area. Also, research methods and laboratory conditions have been inadequate. Loigu considers international investigation and cooperation to be the only way to clarify the situation.

### **International Team Investigating Nuclear Waste Basin**

The international project team that is investigating how to clean up the radioactive waste lake in Sillamäki began its work in June. With the aid of studies, the team is determining how quantities of waste hazardous to the environment can be rendered harmless.

Formed to clean up the lake, the team includes representatives from Sweden, Finland, Estonia, and the local firm responsible for its pollution in past years. A representative of the Radiation Safety Center is on the team from Finland.

The purpose of the team is to examine the condition of the walls of the basin, determine the nature of the waste that was dumped into the lake, take biological samples from the Gulf of Finland, and gauge how the waste is affecting the sea.

Paavo Tulkki, the head of the Biology Department of the Maritime Research Institute, could not say at this point how collapse of the embankment might affect the Gulf of Finland. It would, in any case, significantly add to the strain on it.

### **Waste in at Least Two Other Places**

In addition to Sillamäki, there are at least two other radioactive problem areas in Estonia on the Gulf of Finland coast: There is a radioactive waste dump on land at Saku, about 10 km from Tallinn. There they are still burying sealed sources of radiation to a depth of several meters.

There is a Russian naval base at Paldiski, at which there are two small nuclear reactors.

### **'Highly Dangerous' Missile Fuel Stored at Karkne, Tartu**

WS1410131092 Tallinn ETA NEWS BULLETIN  
in English 0948 GMT 14 Oct 92

[From 14 October POSTIMEES, p 1]

[Text] Wednesday, October 14—Seventy tons of highly dangerous missile fuel is still stored in a depot in Karkne and a similar amount at the Tartu air base, Teo Kruuner, chairman of the property transfer commission, said



yesterday. The Russian military are demanding that the fuel pipelines be removed first. The Defense League claims that the Russians may leave the fuel unless they are prevented from removing the pipes. As a result the transfer of the air base has been stopped. While Kruuner blames the Defense League, the latter suspect the former Soviet Air Force officer Kruuner of a secret deal with the Russian military.

#### **Environment Minister Reports Radioactive Contamination in Estonia**

*AU2210162092 Hamburg DIE WELT in German  
22 Oct 92 p 1*

[Peter Michael Wulf report: "The Radioactive Legacy of the USSR"]

[Text] Hamburg—Mountains of uranium waste, radioactive waste in the sea, nuclear power plants about which nobody knew—Estonian Environment Minister Tonis Kaasik described an inferno of communist environmental pollution along the Baltic Sea at the first north-east European environmental congress yesterday.

At the same time, the Russian Ministry for Atomic Energy announced that 135 technical failures were registered at nine Russian nuclear power plants between January and the end of September this year. A total of 13 were classified as "serious" on the basis of an international scale for nuclear incidents.

According to Environment Minister Kaasik, a 25-meter-high pile of sludge mixed with uranium wastes is only one example of numerous open storage places with dangerous waste in Estonia. In some places in the pile, the radiation intensity of the wastes exceeds the international limits by 40 to 60 times.

Last December Estonian officials discovered two unregistered nuclear reactors at the former Soviet naval base of Paldiski. "Now we know that two more reactors exist in the area that is still occupied by the Russian Army," Kaasik stated.

The minister was not able to provide exact figures concerning radioactive materials and toxic substances from World War II that were dumped into the Baltic Sea by the Soviets. "Time bombs at the bottom of the Baltic Sea will not be removed by ignoring them," Kaasik pointed out.

Latvian Environment Minister Indulis Emsis mentioned similar environmental problems. According to an analysis of the Nordic Project Fund, about 260 million cubic meters of waste water from the industry and households are flowing into the Baltic Sea without prior treatment. The contamination of the Daugava River, which is fed with a large portion of the waste water, has repeatedly caused jaundice epidemics in Riga. A high fish mortality rate has been observed in Riga Bay.

The fauna in Sweden is also heavily affected by radioactivity from the former Soviet Union. The caesium values in the meat of Swedish elks has again risen six years after

the Chernobyl disaster. After the beginning of this year's elk hunt, measurements revealed an average radiation value for caesium-137 of 1,443 becquerel per kg as compared with 1,240 becquerel last year.

Prior to the Chernobyl disaster, the caesium limit that was allowed in elk meat was 300 becquerel. After Chernobyl it was increased to 1,500 becquerel.

#### **Latvia Monitors Increased Radioactivity After Ignalina Leak**

*LD1610144992 Riga Radio Riga Network in Latvian  
1830 GMT 15 Oct 92*

[Summary] Following the leak reported at the Ignalina nuclear power station in Lithuania, there has been an increased level of radioactivity monitored: At Daugavpils, Zilani, and Dagda the meteorological stations monitored 14, 13, and 12 microroentgens an hour respectively at 1700 today. Observations are to continue for at least a day.

#### **Ignalina Nuclear Power Station Incidents**

##### **First Unit Under Repair**

*WS1510130192 Vilnius ELTA NEWS BULLETIN  
in English 1950 GMT 14 Oct 92*

[From ELTA "NEWS BULLETIN" No. 100]

[Text] 14 October 1992—Now the Ignalina's nuclear power station is working at half of its capacity, its first bloc is under repair. The second bloc is working at the capacity of 1300 megawatts and causes no problems. The first bloc will start working on December 1. All its metal constructions have been checked by a special apparatus and the discovered defects have been removed. The greatest attention is devoted to the reactor itself and its valves which have been the main reason of the recent accident at the St. Petersburg nuclear power station.

From December 1 the two blocs of the Ignalina's nuclear power station will be working until April 1993.

##### **Second Unit Shut Down**

*LD1510094492 Vilnius Radio Vilnius Network  
in Lithuanian 0800 GMT 15 Oct 92*

[Text] Yesterday afternoon Povilas Vaisnys, chairman of the State Inspectorate for Safety in Nuclear Power Engineering, spoke on Lithuanian television about defects at the Ignalina nuclear electric power station. What is the situation today? Vaisnys spoke to us on the phone about this.

[Begin recording] [Vaisnys] The State Inspectorate for Safety in Nuclear Power Engineering announces that at midday today—that is, 15 October—the second power unit at the Ignalina nuclear electric power station will be shut down. The reason for the shutdown is that an increase in radiation has been recorded in one of the installations of the second power unit which are not being serviced [as heard]. Because it is not possible to find out exactly what the cause of the increased radiation

is and, as I said earlier, because the premises are not being serviced and the staff members cannot enter these premises when the power unit is in operation, therefore we cannot find out and see what the cause is.

After having analyzed the situation we arrived at the conclusion that the cause of this increase in radiation could be a defect in some of the technological pipeline systems. The level of the radiation leak is not great, which means that this could be caused by a crack in the technological tubes or a crack in the (word indistinct) tubes. However, since we cannot be sure of this, we decided to shut down the power unit, to cool it so that we may enter these premises and see what the cause is.

I would like to mention once again, although I already said this yesterday on television, that this situation is not so acute. I would say if this had happened before the Chernobyl disaster or even several years ago we would not have been especially concerned about it. However, the world community is paying special attention to the operation of the power units at our nuclear electric power station. I must say that the nuclear association is like a united family the members of which take a keen interest in one another; therefore, if we, as an independent nuclear republic now, want to communicate with the world's nuclear family we must behave as all civilized countries behave. In such cases normally the reactors are shut down in the Western countries.

Our main task is to ensure the safety of the people of Lithuania and to ensure the safety not only of the people of Lithuania but also the safety of the neighboring countries with regard to the Ignalina nuclear electric power station. We believe that our decision is right.

[Unidentified correspondent] Your conclusion as a specialist and as a man—is there any danger today to the people living around the Ignalina nuclear electric power station and the people of Lithuania?

[Vaisnys] There is no danger either to the people of Lithuania or to the residents in the area. The effects from the above mentioned defects will not be noticed in the nuclear electric power station or near it. The radiation

level is absolutely normal. What we have at the moment is a small increase in radiation in the technological premises. I want to stress this—that although the increase in the radiation level is very small we, the inspectors and the specialists at the nuclear electric power station, are making efforts to find the cause of any defect and eliminate it as soon as possible. This is our principled point of view on the safety of the nuclear electric power station. [end recording]

#### Defective Pipe Cause of Shutdown

OW1910173492 Moscow BALTFAX in English  
1714 GMT 19 Oct 92

[Following item transmitted via KYODO]

[Text] The reason for the nuclear reactor shutdown at Ignalina power plant in Lithuania was a 10-mm crack in one of the reactor's stainless steel pipes, the plant's chief engineer Gennadi Negrivoda said in an interview for BALTFAX.

The chief engineer believes that the breakdown is fairly serious. "The reactor uses 3200 pipes of this kind, and we have never come across accidents like this before," he said.

Mr Negrivoda is pinning the responsibility for the shutdown on the pipe manufacturers rather than on those who are operating them, although the final diagnosis will be made following the expert evaluation.

The plant's employees told BALTFAX that the reactor will be put back into operation on the night Monday to Tuesday. By Thursday, it is expected to build up its maximum power output.

As was reported earlier, the nuclear power plant's first reactor is still under routine maintenance until December 1. Power limitations for the republic's consumers Monday were kept on the level of 25 percent, with 12 percent of power needed by the republic (200 MWt out of 1600 MWt) being supplied from Estonia and Belarus.

## REGIONAL AFFAIRS

**Germany, France Join Efforts To Modernize East European Power Plants**

92MI0661A Bonn *TECHNOLOGIE NACHRICHTEN-MANAGEMENT INFORMATIONEN* in German  
29 Jun 92 p 13

[Text] On 3 June 1992, the German energy supply companies Bayernwerk and Preussen-Elektra and the French company Electricite of France signed an outline agreement in Duesseldorf on energy cooperation in the countries of Eastern Europe.

The three European companies are thus creating a contractual basis for their contacts and activities which have already existed for over six months on many levels and in many spheres. By cooperating in this way, Electricite of France, Bayernwerk, and Preussen-Elektra intend to help the countries of Eastern Europe to set up an ecologically and economically efficient energy supply system. In view of the enormous technical, economic and financial demands resulting from the restructuring of the energy supply in the former Eastern bloc countries, it is appropriate to combine activities that were once separate.

The first joint activities include projects in Hungary, Czechoslovakia, Poland, Russia, the Ukraine, and Byelarus. These include, for example, advice and support for the privatization of supply companies and the creation of efficient company structures. There are also projects involving power stations and the electricity network: for example, the modernization and expansion of the Polish hard coal power station Dolna Odra and the completion and retrofitting with safety equipment of the Mochovce nuclear power station under construction in Slovakia. In addition, preparations will also be continued for connecting up the eastern European electricity network to the western European combined system at some stage.

## GERMANY

**University Group Studies Electronic Equipment Recycling**

92WS0768B Munich *ELEKTRONIK* in German  
21 Jul pp 16-17

[Article by R. Hopperdietzel, J. Franke, G. Liedl, J. Schiebisch, D. Tartler, M. Fischer, P. Schuderer: "Recycling Electronic Equipment"]

[Text] Since recycling electronic equipment requires knowledge of the most varied fields of work, an interdisciplinary working group, RECI—Recycling Circle, has been formed at Erlangen-Nuremberg University. RECI's field of work ranges from development and design suitable for recycling all the way to disassembly and recycling of old equipment. To complete the offerings one also develops logistics concepts and carries out studies of the economic effects of recycling.

The necessity to assure nonpolluting waste disposal and to save resources has generated the requirement for

greater recycling of technical products. Innovative technologies and rapidly changing fashion trends are responsible, primarily in the electronics industry, for the fact that equipment in part still intact is often prematurely replaced. Annual growth rates of five percent and more are presently being calculated in this field. As a result of this development, the accumulating volume of electronics is constantly growing. Estimates by the Federal Environment Ministry are for a total volume of about 800,000 tons per year. The existing waste disposal industry is not yet prepared for this sudden increase in volume.

The problem consists not only of the amount of annually accumulating waste, but more specifically of the complex composition of this type of waste. On the one hand, the valuable material it contains represents an incentive to utilize reprocessing methods, but on the other hand the heavy metals contained in it and the furans and the dioxins which form during combustion entail risks in themselves.

When the Electrical Equipment Recycling Ordinance takes effect on 1 January 1994, the lawmakers will introduce obligatory return and waste disposal for manufacturers, operators and importers of electrical equipment. The decree will include the following groups of equipment<sup>3</sup>: Household equipment, entertainment electronics, technical office, information and communications installations, equipment for monetary transactions, electric tools, measurement, control and regulating installations, illumination equipment, toys, clocks and watches, laboratory and medical technology equipment, video recording and image reproduction equipment.

In order to be able to solve the problems of disposal and combustion, efforts must be made to close the cycle of parts or raw materials, respectively. Only recycling can contribute to the solution of the waste disposal problems. Depending on the basic recycling strategy, one differentiates between the methods of reprocessing (dissolution of the product form) and reconditioning (retention of the product form).

The objective is to develop economic methods of disassembly, reconditioning and reprocessing. For future products the aspect of recycling must be introduced as early as during development. Another important task is to organize the waste disposal logistics. The RECI Recycling Circle at Erlangen-Nuremberg University is working on the described set of problems on the basis of actual industrial projects.

**Recycling-Suitable Design of Electronic Products**

The designer determines a large part of the product costs for manufacture and use and therefore has special responsibility. The demands on the design are further added to because of the ecological necessity and economic opportunities of recycling.

In contrast to the problems of disposal of used products, recycling-suitable design of new products is a forward strategy. Because of the increasing proportion of waste,

the costs measured over the entire lifetime and the potential rationalization potential, special attention must be paid to it.

Product design includes:

- Product planning, which defines the requirements, cost framework, target group, etc. and which should firmly incorporate recyclability, above all, into the goals and objectives;
- Development, which provides the technologies and principle of function;
- Design, which selects materials, creates the geometric form and determines the combination techniques;
- Production scheduling, which designs the production and assembly processes.

Efficient product design can only be achieved through integrated thinking and parallel processing by these areas.

Within the framework of the Recycling Circle (RECI) at Erlangen-Nuremberg University, in close cooperation with companies manufacturing electronics, guidelines for product design suitable for recycling are being gathered, developed and structured. For this purpose, at the Chair for Production Automation and Production Systems, computer-supported tools are being developed which are intended to focus on these rules and to monitor them by means of so-called Recycling Rule Checks at a very early stage in the product creation phase. Analogous to the research work in the fields of Design and Manufacturing Rule Checks, this takes place in a twofold approach: Development of special software tools as well as implementation of the resulting rules directly into the CAD systems.

#### Disassembly Technology

Recycling of products requires (partial) disassembly. To assure this principle it is necessary to look at the systematic arrangement of the recycling process. In so doing one basically differentiates between renewed utilization and recycling of used products or parts of them<sup>1</sup>. Renewed utilization requires reprocessing of components or individual parts, which for reasons of production engineering includes (partial) disassembly. Product recycling implies dissolution of the product form for the purpose of recovering raw materials. For reasons of quality assurance, the fractions of materials resulting from this reprocessing procedure must come out as pure in their kind as possible. (Partial) disassembly is required in order to assure high purity in the secondary raw materials.

Since equipment disassembly at present takes place primarily manually and is connected with high personnel costs, the question of the necessary degree of disassembly occurs. In this context the so-called Recycling Rate was introduced as a characteristic quantity for the specification of the recycling process. It describes the degree of separation of a piece of equipment in material proportions. Studies of how this might be carried out by using television sets, for example,<sup>4</sup> show that even crude

disassembly of the products holds out the prospect of a high recycling rate. Significant increases in disassembly time, and thus of the costs, bring only scant improvement in the recycling rate.

There remains the problem of the disassembly technology to be used. At this time manual disassembly predominates, except for a few pilot facilities. Typical characteristics of used products, such as impurities, corrosion, damage or product modifications, can be given consideration in a flexible way by the worker. To an industrial robot this poses multiple problems due to its lack of "sensors," "experience," as well as "technology." On the other hand, in order to reduce disassembly costs and humanize the work place, the innovative process should be aimed in the direction of automated disassembly. A first step may be seen in the gradual mechanization of manual work stations.

As already mentioned, crude preliminary disassembly yields satisfactory recycling rates. The development of economically operating tools for nondestructive as well as (partially) destructive preliminary disassembly of electronic equipment represents an innovative project at the Chair for Production Automation and Production Systems at Erlangen-Nuremberg University. The use of multifunctional, sensor-supported, components guarantees high flexibility for the most varied disassembly tasks.

The design of the disassembly process depends greatly on the preceding assembly process. As significant initial conditions might be mentioned the material and production-technical composition, as well as the combination techniques used. Another aspect therefore consists of looking at the design of the interdependent assembly and disassembly processes in an integrated manner and optimizing them from the aspects of technology, economics and ecology<sup>2</sup>. Because of the complexity and multiple dependencies, a computer-based tool is being developed for this.

#### Recycling Synthetic Materials

Today recyclability is an important criterion in selecting materials. However, economic recycling of synthetics is only possible if methods can be developed which can produce qualitatively competitive recycled materials. The most important precondition for recycling synthetic waste is type purity and the absence of foreign matter and contaminants. Synthetic waste which does not meet these preconditions can be burned to produce energy. The heat content of synthetics corresponds roughly to that of heating oil. Methods for reprocessing and purifying greatly contaminated synthetics, which operate at high cost with regard to process technology and energy consumption, are not justified for reasons of economy and environmental technology. Recycled material from contaminated waste can only be used after costly reprocessing for less valuable applications. Storing the waste should be avoided due to the limited storage space available. For these reasons organized disassembly of



electrical and electronic equipment makes it possible to obtain type-pure and thus recyclable synthetic parts.

After the construction and packaging sector, electrical engineering applications represent the most important application field for synthetics. In addition to housings and mechanically functioning parts, synthetics are used, due to their outstanding electrical properties synthetics, in cables, components, printed circuit boards, etc.

Experience with disassembly of automobiles shows that only larger synthetic parts can be economically disassembled, sorted and used. In electrical engineering these are primarily the housing components in computer technology and entertainment electronics. The majority of synthetics are used as housings in electrical engineering. Smaller, not type-pure quantities of synthetics are used in the printed circuit board, in components, plugs, cables, etc.

Recycling of a number of models and types of synthetics, which differ according to the manufacturer of the equipment, requires a great expense of sorting and logistics, if the synthetics are to be recovered as type-pure byproducts. The fireproofing equipment necessary for many applications, which is usually still based on halogen-containing fireproofing agents, represents another set of problems in reprocessing, since at this time there exist no simple systems for identifying the type of fire protection in old parts.

The Chair for Synthetic Technology, in cooperation with the South German Synthetics Center in Wuerzburg, is carrying out research projects and industrial projects for the recycling of synthetic materials. A well-equipped technology center is available with comminution and reprocessing equipment (cutting and hammer mill, separator, sieve jigger) and processing machinery (regranulation-extruder, injection molding, press, etc.), as well as a laboratory for mechanical, physical-chemical and thermal testing and microscopy of synthetic materials.

#### **Automated Disassembly of Printed Circuit Boards**

A considerable component of the electronic waste consists of printed circuit boards equipped with electronic components. Economically operated disassembly of flat modules, which is only done by a few progressive companies (in the United States, FRG), will become much more important in the future:

- Hazardous material-containing components (such as PCB-containing condensers) must be protected against further use.
- Efficient recycling requires the greatest possible pre-enrichment of the material.
- A growing market already exists for the marketing of high-grade electronic components (memory, programmable memory, processors, crystals, etc.)
- The highest storage costs can be saved with reuse/additional use and recycling.
- Nonpolluting concepts of waste disposal promote a market-relevant business image.

- The legal regulations require waste disposal at the highest technological level.
- By recycling at the highest possible level, primarily the most nonpolluting type of recycling is implemented.

The stripping of printed circuit boards, until now done manually, is not able to cope with the anticipated quantities, however. Only by automating large segments of these disassembly tasks will it be possible to handle the volume of flat modules which will need disposal.

Obsolete electronic scrap poses very high demands on automated disassembly (contamination, corrosion, damage, alterations, small serial runs, incomplete product documentation, separation in space and time between production and disposal).

For the reasons mentioned the demands for flexibility in an automated disassembly system must be made many times greater than for assembly. The concept for the required system must address these concerns through adaptable kinematics and tools, flexible controls and simple programming methods, the use of highly developed sensors and powerful pattern recognition. Bringing in the capabilities and know-how of the human being from ergonomic points of view is the uppermost goal of designing the system.

A disassembly facility based on the approximate concept shown in Fig. 4 [not reproduced] is being developed at this time by the Chair for Production Automation and Production Systems. It involves modular work stations which can be designed as manual or automatic and are connected with one another through mechanized systems.

In the first step the in part heavily contaminated flat modules are cleaned in a nonpolluting process. By means of optical analysis, components with hazardous materials are recognized and valuable components determined. The component positions and characteristics reported are transmitted with computer support to the subsequent stations. Specialized disassembly cells (SMD [surface-mounted devices], VHV, exotics, etc.) remove the defined electronic components with selectively applied thermal energy. Downstream, the components are sorted, prepared and tested. The remaining components are mechanically evacuated in parallel from the circuit board.

#### **Recycling Possibilities for Printed Circuit Boards**

Disassembly technologies enable macroscopic sorting of components in electronic equipment and provide the foundation for reuse and recycling of old equipment. While parts of metal or synthetic housings are increasingly being reused, the fraction called "printed circuit board" resists material recycling because of its complex structure.

Figure 5 [not reproduced] gives the typical composition of a circuit board with components and shows the problems of material recycling: Such a circuit board involves a mixture of many substances composed of metal, metal alloy, glass, ceramics and, above all, a



multitude of different synthetics. Exact knowledge of the composition of this blend of materials is a precondition for material recycling and makes it possible to locate, quantify and isolate the valuable or harmful substances. In order to clarify such questions, analytic and chemical methods such as X-ray fluorescence analysis, atomic absorption spectroscopy and polarography must be used. By using these and other investigation methods, it is possible to determine for example the distribution of valuable and harmful materials between the actual printed board and the components. This is shown for a few selected elements in Figure 6 [not reproduced]. Based on the results thus obtained, one must first evaluate existing methods to dispose of circuit boards, establish material flow diagrams and develop efficient recycling methods.

Recycling of printed circuit boards at present takes place with physical, thermal, metallurgic and chemical methods. Physical methods make it possible to separate the comminuted printed board material into a metal-rich fraction (such as 56 percent by weight metal, 10 percent by weight synthetics) as well as a synthetic and bromine-rich fraction (49 percent by weight synthetics, 7 percent by weight metal, 6.5 percent by weight bromine). Such sorting and enrichment processes are often incorrectly already called "disposal" or "recycling." In the sense of real recycling, these fractions must go through chemical, metallurgical or thermal processing steps before the pure substances are available for actual reuse.

With thermal methods the synthetic fraction is reduced and the metals contained in the circuit board material recovered by means of metallurgical procedures. The focus of interest here is Cu, Ni and precious metals. Toxic combustion products require effective waste gas purification facilities. Beyond that, with this method about 70 percent by weight of the original board mass is obtained in the form of "slag" and must be further disposed of. Chemical extraction methods lead to extensive isolation of metals, but also leave behind about 70 percent by weight of the original scrap mass in the form of insoluble compounds and synthetics.

Effective methods for utilizing circuit board scrap are primarily recognized by the fact that after conversion the lowest possible proportion of weight and volume of the original material quantity remains behind in the form of an "unusable" product (such as slag). A method combining the steps of "chemical extraction" and "synthetic recycling" will meet this demand. "Synthetic recycling" in this respect means reductive high-pressure techniques, solvolyses and polymer breakdown.

In addition to the most extensive breakdown of material possible, it is of crucial importance for recycling methods not to lead to a shifting of the problems. The "printed board" scrap problem must not be converted into a waste water or exhaust air problem. Effective methods for extraction, enrichment and solvent regeneration are needed. Along with chemical analysis problems these sets of questions are being studied in a research

project at the Institute for Inorganic and Analytic Chemistry at Erlangen-Nuremberg University.

#### Recycling—the Logistics Chain Closes

The economic and long-term ecological success of recycling depends greatly on the success of logistics concepts. Individually contemplated partial solutions usually appear highly efficient, but when expanding the horizon to include the desirable goal of "safeguarding the environment" they are often ineffective or even counterproductive. The ability to solve technical problems must thus be combined by means of intelligent links between all systems in the material cycle. Only through such a comprehensive view of all flow conditions can acceptable solutions be found.

When looking at the material cycle one notices that the logistics process repeats itself through recycling. Once again used goods must be obtained and added to the "production process" of disassembly or generally to recycling, in order subsequently to distribute them to those who recycle/make further use of or reprocess them.

The first step is to consider the purchase logistics. Here one must distinguish between various strategies. The customer surely expects that the product will be completely returnable at the end of the period of utilization. But how does one react when, for example in the event of repairs, only partial components have to be exchanged? Does it make sense to ship these components directly to the system supplier for further recycling? The influence of such considerations on a future selection of suppliers cannot be dismissed. To determine the supply depth ("make or buy" in disposal service) is therefore of a strategic character and represents a crucial factor for further company development.

After pointing out these rather more strategic problem areas, the individual logistic areas will now be examined. A significant problem sector in purchasing old equipment is the inability to plan for it. The customer, a recipient on the one hand, but a supplier from the aspect of recycling, can surely not be all that rigidly tied down, as is the case today from the aspect of actual purchasing logistics. The establishment of information and prognostic systems for the nature and quantity of usable materials, all the way to development of marketing concepts for repurchasing, must be considered here.

From the viewpoint of the disassembly process, the actual disposal logistics become the most important. The central idea of recycling—type-pure separation and preparation of the accumulating materials—here represents an expense which should not be underestimated. How to conceive such systems for economical design of, on the one hand, a disassembly process combined with the subsequent necessary purification and quality assurance tasks, and, on the other hand, additional distribution of the recycled materials while optimizing inventories, transportation and handling, must be a task for the future.

While in the existing production process an increasingly closer connection between purchasing and production logistics can be reported, in recycling this coupling is rather in the direction of waste disposal and distribution logistics. It must therefore be the objective here to optimize this "part" in a unit and to close the material cycle by connecting distribution with renewed purchasing.

Despite all the ecological concerns, quantification of the costs—particularly the logistics costs—remains the focal point in recycling electronic equipment. Furthermore, the already mentioned imprecise planning makes exact determination and quantification of these costs difficult. Although the logistics costs represent a considerable part of the overall costs, in most companies they are entered under general costs without any distinction. By so doing the most important information to support both strategic decisions and operational control in this field is missing. Anyone who succeeds in making the cost structure transparent in this field will not only open up major rationalization potentials, but will also enter the market with pricing that is stable—because it is sound—in the long term.

The company's system of goals must first generate disposal strategies, such as determining one's own disposal quantity. Based on that a disposal network will be designed, supported by computer, and subsequently configured. Within the framework of this network configuration the company will go through the following steps:

- An actual need analysis to illustrate all the disposal processes (quantities, times);
- Inclusion of all activities in the disposal network (such as disassembly/sorting/reprocessing/purification, transportation, transshipment, storage);
- Inclusion of all costs which occur during these activities.

Following incorporation of the basic data, the network is transferred to a computer-supported simulation model. Because of the cost transparency which is thus created, it is not only assured that a disposal controller to be implemented in the company will be able to guide old equipment economically through the disposal network, but also that individual technologies, which until now have been considered in isolated instances, will be able to influence the entire logistical chain evaluated. Thus, the most efficient way to sensible disposal logistics may be found for the company.

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#### Auto Industry To Install CFC-Free Air Conditioning Systems By Late 1993

92MI0669A Bonn DIE WELT in German 7 Aug 92  
p 13

[Text] The automobile industry of the Federal Republic will give up using chlorofluorocarbons (CFCs) in air-conditioning units and as insulation foams in refrigerated trucks before a corresponding ordinance of the Federal Minister for the Environment, Protection of Nature and Reactor Safety comes into force on 1 January 1995. According to its own account, the Association of the Automobile Industry eV (VDA), Frankfurt gave this assurance in writing to Klaus Toepfer, Federal Minister of the Environment. CFCs are regarded as ozone destroyers.

Consequently, the German producers will be offering all air-conditioning units for new passenger vehicles in the CFC-free form by autumn 1993 at the latest, when the 1994 models start to be issued. More than half of the models will already be changed over in the autumn of this year when the 1993 models come out. The German producers fit about 700,000 passenger vehicles with air-conditioning units every year; this represents 15 percent of total production.

The sector has also declared that it is prepared to renounce prematurely the use of CFCs for foaming sandwich panels for insulation systems. The use of fully halogenated CFCs in foams for refrigerated trailers and structures is to end one year before the deadline laid down by the law. The changeover to substitutes will be completed during the course of 1993. The premature renunciation of CFCs presupposes that the substitutes are acceptable from a technical, ecological, and health point of view.

### **Environment Ministers View German, Albanian Environmental Agreement**

*AU1710180592 Tirana ATA in English 0915 GMT  
16 Oct 92*

[Text] Tirana, October 16 (ATA)—After signing the agreement in the field of environment between Germany and Albania, the minister of the Federal Republic of Germany on environment, natural protection, and reactors' insurance, Prof. Dr. Klaus Toepfer met with the Albanian minister of health and environmental protection, Tritan Shehu. They held an open and friendly talk.

The German minister valued the democratic achievements of democracy in Albania and said that Albania is on a correct road. He expressed satisfaction that the cooperation between the two countries in the field of environmental protection is crowned with the signing of the agreement which will greatly help this cooperation. Germany, too, he said, has problems in the environmental field in the new lands, but, it will however help Albania. We will give all round contribution especially to Albania, which has been suffering so much, Prof. Dr. Toepfer said.

### **Minister Calls for Closure of Chernobyl-Type Power Stations**

*LD1510155992 Berlin DDP in German 1359 GMT  
15 Oct 92*

[Excerpt] Bonn (DDP)—Federal Environment Minister Klaus Toepfer has reacted with great concern to the decision by the Ukrainian authorities to start using block three of the Chernobyl reactor again by the end of the week. Toepfer said in Bonn today that all nuclear power stations of the Chernobyl type must be shut down permanently due to their safety shortfalls. The accident at the Lithuanian nuclear power station Ignalina on Wednesday is up-to-date proof of the security risks of this type of reactor. [passage omitted on Toepfer expressing understanding for energy provision problems in the Ukraine this winter]

### **Bundestag Deputies Protest Restart of Chernobyl**

*LD1610101792 Hamburg DPA in German 0931 GMT  
16 Oct 92*

[Text] Bonn (DPA)—Bundestag deputies from all parliamentary groups have described the restart of the Chernobyl reactor as "a black day" for the people in Europe. In a debate on safety in nuclear power stations in eastern Europe today they described the decision of the Ukrainian Government as irresponsible.

SPD [Social Democratic Party] deputy Klaus Kuebler called on the Federal Government to intervene in order to have this decision reversed. The FDP [Free Democratic Party] deputy Gerhard Baum said that it would be cynical and absurd if Austria of all countries intends to get electricity from Chernobyl.

### **Police Seize 2.2 kg of Highly Radioactive Uranium**

*LD1610131792 Hamburg DPA in German 1244 GMT  
16 Oct 92*

[Text] Munich (DPA)—A special police unit has impounded 2.2 kg of highly radioactive uranium at a highway parking lot in southeast Munich. Seven people were provisionally detained. Arrest warrants were issued for three of them, the Munich Customs Investigation Office announced today.

### **Nitrogen Leak at Biblis Nuclear Power Station Kills Worker**

*LD1710143592 Hamburg DPA in German 1403 GMT  
17 Oct 92*

[Text] Biblis (DPA)—A member of staff of the Biblis nuclear power station lost his life in an accident today at block B of the plant. This was announced in Frankfurt today by Georg Dick, deputy government spokesman of Hesse and spokesman of the Environment Ministry. At 1028 nitrogen escaped while work was being carried out in the control area of the reactor, which is in operation. Apparently the employee was suffocated by the substance. According to Dick, the body is still in a sealed room this afternoon.

Police and Environment Ministry experts are checking whether the nitrogen leak is permanent or only temporary. It is still unclear whether radiation has been emitted in the accident. The escape has apparently been contained in the control area, which is sealed. Dick further announced that block B of the Biblis power station is still in operation.

## **FINLAND**

### **Special Environmental Troops To Be Set Up**

*LD1310100492 Helsinki Yleisradio Radio Network  
in Finnish 0600 GMT 13 Oct 92*

[Text] Norway is planning to set up special environmental troops in association with the country's defense forces. These so-called green troops could also be placed under UN command in the event of various environmental and natural disasters. Ulla-Maria Johansen reports:

[Johansen] A committee appointed by the government proposes in its bill that so-called green forces, that is, troops which have received special training in environmental protection, should be set up in the defense forces. It is proposed that the unit should comprise 600 soldiers and reinforcements should total 1,100 soldiers, including the officers.

The Defense Ministry, the Ministry of Environmental Affairs, and the Foreign Ministry are to pay jointly for the training of the troops and the green forces are designed to be used in environmental and natural disasters both at home and abroad. The units for the green forces will be selected from volunteers among the defense forces and the special training to be given will

cover not only the handling of great environmental disasters, such as large oil and chemical spills, but also environmental cleansing and restoration work after a war.

Abroad, the green forces are expected to operate in close cooperation with the UN's newly created environmental disaster center (UNCUEA). Defense Minister Johan Joergen Holst stresses that the dispatch of green forces abroad is planned to take place at the request of the UN or the CSCE. In his view, there is no doubt that there is a need, for instance, for environmental restoration work after military operations.

This is Ulla-Maria Johansen in Oslo.

## FRANCE

### Employee Provokes 24-Hour Stoppage of Nuclear Station

LD1710030292 Paris France-Inter Radio Network  
in French 1700 GMT 16 Oct 92

[Text] A nuclear station is not protected against the irresponsible action of its technicians. This was demonstrated yesterday afternoon at the Paluel nuclear station in Seine-Maritime department. Because he thought his promotion was not enough, a maintenance worker deliberately provoked the complete stoppage of the station for 24 hours. In a revenge act, the employee activated emergency stoppage actions throughout three wings of the station by depressing a master control switch. There has never been such an incident at a French nuclear station. [Passage omitted: station director confirming scenario]

## ITALY

### Minister Views 'Plummeting' Environment Budget

PM1510192492 Rome LA REPUBBLICA in Italian  
7 Oct 92 p 22

[Interview with Environment Minister Carlo Ripa di Meana by Antonio Cianciullo; date, place not given]

[Text] Rome—A thousand billion lire for 1991, 650 billion for 1992, and 450 billion for 1993. While the quantities of toxic waste and poisons in the atmosphere continue to increase, the Environment Ministry's budget is plummeting. This fall promises an unequal exchange—a few crumbs of immediate saving, against damage whose economic repercussions will be on a far greater scale. In other words, if environmental policy is paralyzed, everything will have to be repaid, with a few extra noughts added on the end. Does this not seem like a bad deal?

"It is a very bad deal; so much so that I have stated very clearly that I will not agree to it," Carlo Ripa di Meana said. He is the former EC commissioner for the environment who has been in charge of Italy's environmental policy for the past 2 months. "The Finance Bill was imposed in the old way, pursuing merely accounting criteria, without any environmental strategy, with an

insensitivity typical of bureaucrats. They decided to chop down an already weak sapling which had little wood to offer, instead of nurturing it and allowing it to bear fruit."

[Cianciullo] Why do you use the past tense? The operation is over and the Environment Ministry has been penalized with a record cut; it received 58 percent less than expected.

[Ripa di Meana] Just 48 hours after the night when my ministry was allocated a mere 422 billion lire, the situation was already reversed. Thanks to [Prime Minister] Amato's personal efforts, the Finance Bill was substantially amended. The past unused surpluses were recovered, and a commitment was made to make them available over the next 2 years. This means that the money available to the Ministry will be about 1,150 billion lire—that is, slightly more than expected. Then there is the adjustment to charges, which has introduced a very innovative principle and could have some very major results.

[Cianciullo] What is the aim of this adjustment?

[Ripa di Meana] It is one of the stages in a journey that shows that environmental policy, far from being a mere whim for boom periods, can constitute a driving force for the economy and a source of revenue. The bill accompanying the Finance Bill, due to be approved by the end of December, states two principles: on the one hand, that summed up in the phrase, "he who pollutes, pays," and on the other that which aims to discourage and prevent the greedy exploitation and wastage of natural resources that have a value of their own and that constitute a limited asset. By increasing charges for the sinking of mines, for water and sewage services, and for trash disposal, we intend to bring several billion lire to reinvest to improve these same services.

[Cianciullo] It is said that this package guarantees a yield of several thousand billion lire. Is this true?

[Ripa di Meana] At the moment it is impossible to make such a calculation, because it will depend on the implementation measures. The important thing is that a major revolution has taken place—the leap from the idea of a tax to that of a charge. In the case of trash disposal, water usage, and mining, people will pay no longer blindly but on the basis of the quality of the service provided. It will be decided in each individual instance what resources are needed to restructure plant and to meet management costs, and charges will be adjusted accordingly. For instance, in the case of urban trash disposal, we will have to examine a system whereby charges will be based not on the size of the house or factory, but on the quantity and kind of trash produced. Charges for water used in agriculture must take account of the irrigation systems used and the availability of water from each individual water basin. Charges must be calculated in each individual instance so as not to wreck the country and so as to penalize old-fashioned technologies by creating an economic advantage in environmental modernization.



*[Cianciullo] The cuts in the Finance Bill follow other difficulties that you have encountered during your 2 months at the Ministry: In the case of ACNA [expansion unknown] the situation is more complicated than ever, the problems caused by the planned power plant at Montalto have not been resolved, and the environmental protection of the island of Budelli has only partly been achieved. Is it more difficult to be an environment minister in Rome than in Brussels?*

*[Ripa di Meana] It is always more difficult to deal with real situations than it is to deal with planning. This is proved by the difficulty of the challenge of the plan to improve urban environments. But I do not share your pessimism. In the case of both Montalto and ACNA, we confined ourselves to demanding something that was a duty, namely, to assess the environmental impact of the work planned. We are still waiting, but if this does not happen, we will be forced to halt the two projects; the law leaves no room for interpretation. As for Budelli, for the present we have only managed to limit the assault by vandalistic tourism, because there has been insufficient monitoring, but the coast guards and forest guards have assured us that there will be closer monitoring next year.*

*[Cianciullo] Monitoring is an important matter. It is the weak link in Italy's environmental policy, one of the factors that increase the distance between Rome and Brussels.*

*[Ripa di Meana] In recent years we have managed to create a monitoring system that is like the old towers erected against the Saracens. Now we must keep our guards alert and active. And this is where we come up against a very Italian shortcoming—the exaggerated quest for consensus and the fear of any practical action. I want to be clear on this point, even at the risk of adopting very unpopular positions. To defeat [Northern League leader] Bossi, we must not pursue him on his own territory, not give the regions more and more new powers, as is being timidly suggested by those terrified by the election results in Mantua. On the contrary, we must defend the stringent implementation of the laws as a principle of authority to set against those who see every*

voter as a potential owner of second and third homes and who are reluctant to displease him. Protecting the environment means countering the excesses of local government and the two-speed Italy.

*[Cianciullo] And yet environmentalists are often accused of yielding to these same temptations, of suffering from Nimby's syndrome: Go ahead and build your incinerators and outlets, but not in my backyard.*

*[Ripa di Meana] I think that exactly the opposite is true. It is those who betray the interests of the environment that exploit situations of constraint to inflict on their weaker neighbors their cargoes of toxic waste or high-risk plants. To draw a dividing line across Italy level with Carrara or Ancona certainly does not help to resolve the problems of the Ligurian or Adriatic coastlines. Bossi can say whatever he likes, but the rivers still flow beyond our borders, exporting our environmental problems. And the same argument applies on a larger scale, too. In environmental terms, and not only environmentally, a two-speed Europe does not make sense. It betrays the false hope of salvation by reviving the continent of little nations. But gilded enclaves do not resolve anything. It is enough to look at what is happening to the Swiss forests destroyed by acid rain from the Rhur Valley.*

*[Cianciullo] One of the conditions for remaining in Europe is a radical political cleansing, an operation with direct repercussions for your party, the Italian Socialist Party. Are you willing to accelerate this process as much as possible?*

*[Ripa di Meana] I want to press ahead as fast as possible with the political cleansing operation. To put on the agenda an issue that is both environmental and ethical means for the Socialists a cleansing plunge in the Jordan, a new boost. Unfortunately this does not seem to be the direction that has been taken: When I see an internal party restructuring based on definitely old-fashioned departments in which real society does not feature at all, I feel very embittered. They have not realized that to espouse the environmental issue, and thus the ethical issue, means finding a way out of the unhealthy bog into which the party is in danger of sinking.*

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